

# THE TECHNOLOGY REVIEW

RELATING TO THE MASSACHUSETTS  
INSTITUTE OF TECHNOLOGY



MARCH  
1 9 2 4

PUBLISHED BY THE ALUMNI ASSOCIATION

# technology review

Published by MIT

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\* \* \* \*

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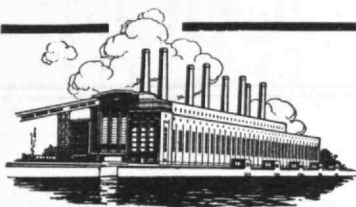
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# THE TECHNOLOGY REVIEW

RELATING TO THE MASSACHUSETTS  
INSTITUTE OF TECHNOLOGY

*Published monthly, from November  
to May inclusive, and in July  
at Cambridge, Mass.*

Vol. XXVI

No. 5

## Contents for March, 1924

*Cover Design by Kenneth Reid, '18*

The Past Month . . . . .	241
Editorial Comment . . . . .	244
The Shenandoah and the Storm . . . . .	246
<i>By Charles P. Burgess</i>	
Psychological Tests and Examinations . . . . .	249
<i>By Herbert E. Hawkes</i>	
Factors in Railroad Work . . . . .	253
<i>By Ralph Budd</i>	
Joseph Lipka: 1883-1924 . . . . .	258
<i>By C. L. E. Moore</i>	
The One Hundred Third Meeting of the Council	259
DEPARTMENTS	
Tech Men in the Public Eye . . . . .	260
With the Undergraduates . . . . .	263
Athletics . . . . .	265
News from the Alumni Clubs . . . . .	267
News from the Classes . . . . .	270
Classified Advertising . . . . .	298



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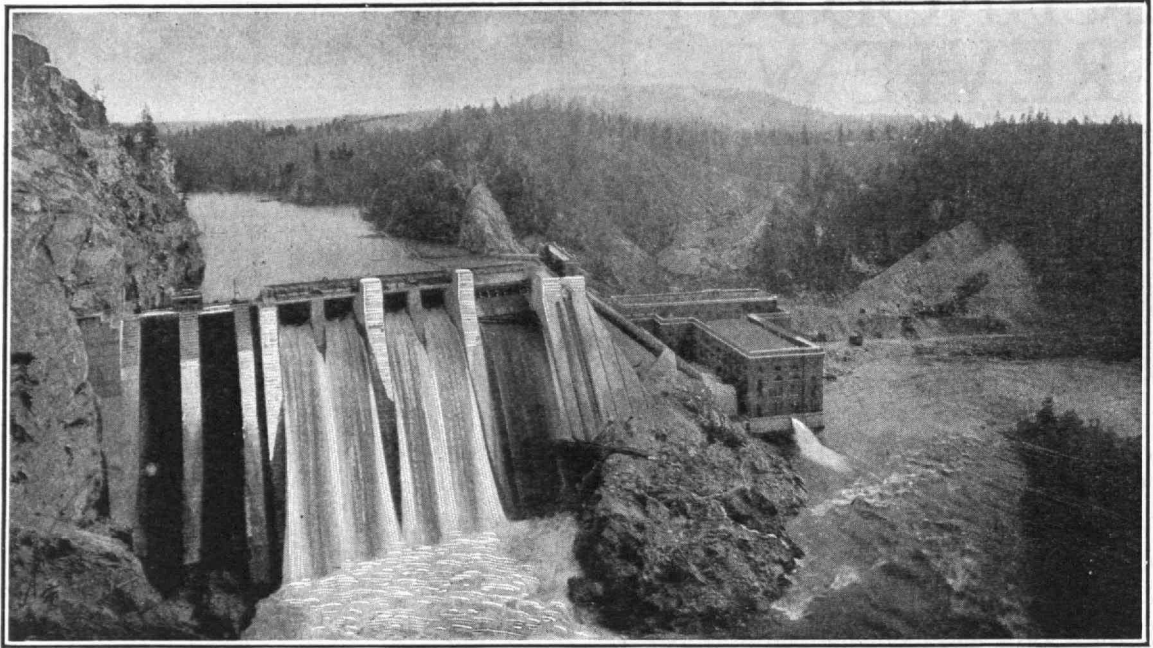
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# GENERAL ELECTRIC

# THE TECHNOLOGY REVIEW

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Vol. XXVI

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## The Past Month

**T**HOMAS B. BOOTH, '95, as nominee for President, heads the ticket recently submitted by the Nominating Committee for officers of the Alumni Association for the year 1924-25. Nominations were made on January 8, 1924, and the ballot will be circulated in mid-March. The other nominations are as follows: Vice-President, Charles W. Aiken, '91; Executive Secretary, Orville B. Denison, '11; Executive Committee, Donald G. Robbins, '07, Eric F. Hodgins, '22; Representatives-at-Large, Stephen Bowen, '91, Frank A. Bourne, '95, Arthur L. Williston, '89, Percy W. Carr, '18, Leicester F. Hamilton, '14; Nominees for Term Members on Corporation, Frank A. Smythe, '89, George L. Gilmore, '90, Morris Knowles, '91, Salmon W. Wilder, '91, William R. Kales, '92, Redfield Proctor, '02.

**A**N event of considerable importance is the approaching Annual Dinner held by the Technology Club of New York for the Alumni at large. It will take place in the Grand Ballroom of the Waldorf-Astoria Hotel, on the evening of Friday, March 7. With a spacious generosity, the Committee on Arrangements, whose Chairman is W. T. Spalding, '10, has made plans for the possible accommodation of 1500 Alumni and guests. The charge per plate is \$5.00.

Radio will lend to this gathering an aspect of science. The General Electric Company, the Westinghouse

Electric and Manufacturing Company and the Radio Corporation of America, between them, hope to make of this dinner and the speeches incident to it, a scientific experiment in broadcasting. They will attempt for the first time in radio history to broadcast the

speeches and music from this New York ballroom to points as far distant across the Atlantic as London and across the Pacific as Honolulu. A land wire from New York to Schenectady, where the General Electric station is located, will be the only stage through which these speeches and this music do not traverse the atmosphere. From Schenectady, radiations will proceed rapidly in all directions and will be picked up by the Westinghouse Station, KDKA, at Pittsburgh, to be from there relayed first to Hastings, Nebraska, and then to San Francisco. After all that, Honolulu will be easy.

The Committee on Arrangements hopes that many local Alumni Associations in other parts of the country will find it possible to hold simultaneous dinners with the aid of a loud speaker and a good caterer. Dayton specifically plans this. Others who do so will probably have the pleasure of hearing Frank A. Vanderlip, Gerard Swope, '95, and Dr. Stratton speak, of hearing speeches from the heads of

the two other companies involved with General Electric in the experiment and listening also to the efforts of several singers (Reinald Werrenrath for one), violinists and orchestras described by the Committee as



THOMAS B. BOOTH, '95  
*who will find sufficient time from his duties with Emery, Booth, Janney and Varney, Counselors-at-Law, to be President of the Alumni Association next year*



"Leading." At any rate, this is the program at present put forth from New York. The Committee hopes to augment it by having a skit from the current Tech Show. At first, it planned for a speech by a Cabinet Officer, but apparently found none available at the time who was not answering inquiries in the Senate Chamber.

The dinner begins at 7:00 p.m. and lasts until \$5.00 worth of Waldorf-Astoria food has been consumed. From these details, it is evident that the New York Technology Club has planned for this meeting interest and entertainment upon a generous scale.

**F**IFTEEN thousand dollars' worth of ground has been covered in the past thirty days towards the complete purchase of the optioned land west of Massachusetts Avenue. This is not, of course, a rapid gain. Of the \$125,000 to be raised, \$40,000 must still be forthcoming. Although progress is slow, it is also steady, and since the Institute quite definitely decided to make no intensive drive for these funds, the progress may be regarded as quite satisfactory.

**B**Y A UNANIMOUS vote the members of the University Club of Boston have decided to merge with the New University Club, which is planning to erect a building in the Park Square district on the site of old Engineering A and B. As a result of this action, there will be henceforth no distinction in name between the two clubs. The venture will be the "University Club," and the present charter, granted by the Commonwealth in 1891, will continue for the enlarged organization.

At a luncheon held at the City Club on February 1, announcement was made that over half of the desired membership had been secured and that of the eighty-eight colleges represented in the membership, Amherst, Cornell and Dartmouth had almost completed their quotas. The attitude of those in charge at this meeting seemed optimistic as to securing a full quota by March 1, at which time the present option on the desired land expires.

The Technology quota of about seven hundred was about one-fifth filled on February 13, at which time twelve Life Members and one hundred seventy-five Senior and Junior Members had made application.

**I**F THE RECOMMENDATION of the Joint Committee of Faculty, Alumni and Undergraduates is accepted, Tech Night belongs to the ages. The suggestion is made by this committee that to Field Day (otherwise unaltered) be added a pushball contest and that following this, there be an adjournment to Walker Memorial for a Tea Dance. It is proposed that this decorous affair be the end of Field Day and that the theatre party which formerly signalized the holiday be done away with. As this is written it seems likely that the Institute Committee will approve these recommendations.

**T**HANKS to an excellent engineering plan, aided materially by consistent good weather, the Class of '93 Dormitory is rapidly approaching a condition of habitability. A little outside work still remains to be done, but acid wash for the brick work and laying of the capstone will almost complete it. Inside, the rooms have been laid out and the laths have been placed on the partitions. Plastering is finished on the ground floor and is half completed on the second floor. Nothing short of seismism can prevent the unit from being ready for occupancy by the beginning of Summer School.

**C**OINCIDENT with the approaching completion of the Class of '93 Dormitory comes the news that the space in the older buildings is to be augmented by the removal of the two fraternities, Delta Kappa Epsilon and Delta Tau Delta, occupying space in them, to other quarters. The two halls thus released for general occupancy will be named respectively Crafts and Ware. This nomenclature follows the practice of naming dormitory halls from past professors of the Institute. Dr. Crafts was Professor of Chemistry from 1870 to 1897, and President of the Institute from 1897 to 1900. Mr. Ware was Professor of Architecture from 1865 to 1881. It is expected that the fraternities whose leases have not been renewed will make their future homes upon the Boston side of the Charles.

**M**ILITARY equipment at the Institute slowly increases. The latest acquisition of Professor Edward F. Miller, '86, Head of the Department of Mechanical Engineering, is a forty-ton tank, which arrived during the week of February 4 from the Watertown Arsenal.

Another and much more weighty acquisition still to arrive is a giant tank of uncomputed size, equipped with machine guns and with everything else that makes a tank homelike. The problem now confronting Institute Officials and Army Officers is how to get this tank from Watertown to the Institute without reducing to pulp all the intervening bridges. The fact that if the tank is run on Massachusetts Avenue, it may crush in the roof of the subway tunnel, is adding to the puzzle. It is perhaps a further puzzle to know what the Institute is going to do with this tank when it gets it. It is said to be capable of something less than one-half mile to the gallon.

**N**O class more avid for Reunion than the Class of '73 ever graduated from Technology. On January 25, it observed its fifty-fourth annual banquet (this one in Young's Hotel), at which time Dr. Francis H. Williams of Boston was reelected President, Philip D. Borden, Vice President, Robert A. Shailer, Secretary, and James E. Stone, Librarian. Six members of the class were present.

On the same evening, six members of the Class of '75 likewise held their annual dinner at Young's Hotel. President Thomas Hibbard presided and was reelected for another term. E. A. W. Hammatt was reelected Secretary-Treasurer.

**O**F the Aldred Lecture Series, the sixth and seventh have materialized since the February issue of The Review. The sixth, on current railway problems, was delivered February 1 by Ralph Budd, President of the Great Northern Railway, and in this issue is reproduced in full on page 253. The seventh lecture was delivered by Ralph Modjeski on February 15. Dr. Modjeski, who has long been prominent as a bridge engineer and who has been closely concerned with the construction of the second Quebec Bridge, chose as his topic, "Some Special Problems in Bridge Design and Construction."

**S**TUDENTS of the problem of World Peace will find highly interesting the news that Dr. Charles H. Levermore, who on February 4 was formally announced as the winner of the Bok Peace Award, is a former member of the Faculty of the Institute. He was a classmate of Professor Davis Rich Dewey at Johns Hopkins University, and from 1888 to 1893 he was a Professor of History at the Institute.

**D**URING two days of the past month, Dr. V. Kanatadati, Head of the Department of Physics at the University of Tokyo and an International aviation expert, was a guest of Dr. Stratton and utilized his time in inspecting the results of the Institute's aeronautical research work. He centered his attention upon the experimental work being done in the wind tunnels in the testing laboratories for airplane motors. His visit was a part of a general tour of inspection he is making of American progress in the air. Upon leaving Boston, Dr. Kanatadati proceeded to Mitchell Field, Long Island, and to Bolling Field, Washington, D. C.

**E**XPANSION of the Research Laboratory of Theoretical Physics continues with the announcement of the appointment of Dr. W. H. Dehlinger as Research Associate. Dr. Dehlinger has studied at the Universities of Utrecht and Munich with Professors Sommerfeld, Ehrenfest and Debye, and at the latter Institution received his Ph.D. degree in 1914. Following this he was assistant to Professor Einstein at the Observatory of Astrophysics in Potsdam.

Most of Dr. Dehlinger's work has been in the field of atomic structure. His acquisition should do much to strengthen the staff of the Physics Department within which the Research Laboratory, as directed by Professor Heymans, is a relatively new development.



CHARLES H. LEVERMORE

Marceau

*The winner of the Bok Peace Award was for five years Professor of History at Technology*

**P**ROFESSOR WILLIAM HOVGGAARD of the Department of Naval Architecture and Marine Engineering has been appointed chairman of a committee to administer the exchange of forty students between American and Scandinavian Universities. Approximately \$20,000 will be awarded this spring to American students who are granted fellowships. The Committee in charge has announced that applicants for fellowships must submit their qualifications to the Foundation before March 15.

**D**ETROIT is set as the Convention center for the prospective foregathering of the Technology Clubs Associated on May 19, 20 and 21. President William R. Kales, '92, hopes that this meeting will prove the beginning of a new lease upon active life for his Association. Further details of the Convention will be set forth in a future issue of The Review.

**F**EBRUARY 6 dated the most recent New England Conference of the American Institute of Architects, which was called for the purpose of advocating uniform building laws, state registration of architects and preservation of New England traditions in colonial architecture. Professor William Emerson, Head of the Institute's Department of Architecture, read a paper at the conference.

**P**ROFESSOR Waldemar Lindgren, at the annual meeting of the Geographical Society of America, recently held in Washington, was elected President for the year 1924. Professor Lindgren first came to the Institute in 1908 as Lecturer in Economic Geology. Since 1912 he has been William Barton Rogers Professor of Economic Geology and in charge of the Department of Geology. In 1920 he became Head of the Department of Mining, Metallurgy and Geology. Professor Lindgren succeeds David White as the President of the Society.

**B**EQUESTS of the past six months have brought a total of \$75,000 to the Institute. By the will of the late David P. Kimball \$50,000 was made available to the Institute. The will of Ellen Vose Smith recently admitted to probate gives to the Institute the sum of \$25,000 to become available upon the death of personal beneficiaries.

**A**SPECIAL extension course in Health Education under Technology auspices has recently been established in coöperation with the State Division of University Extension. It began on January 2 under the conduct of Professor Clair E. Turner, '17, of the Institute's Department of Biology and Public Health. The course, as planned, aims to be of special interest to health officers, school superintendents, teachers and nurses.

**D**EAN H. P. TALBOT, '85, was recently re-elected a Director of the American Chemical Society for the year 1924. George D. Rosengarten of Philadelphia was elected a co-Director with Dr. Talbot and Dr. Leo Hendrik Baekeland, famous on behalf of "bakelite," was made President of the Society.

## Editorial Comment

### The New University Club

Henry Adams said it of Harvard that the great men of its faculties "united to form a social desert that would have starved a polar bear." He was writing, bitterly, of a time before the beginning of this century, and for all we know his words have lost their force for Harvard. Yet there seems still to remain in the make-up of the university man a striking unsocial tendency which now and then manifests itself in a peculiar way.

It is peculiar, for example, that Technology is not at present in the forefront of the activity that aims to establish a new University Club in Boston. Some weeks of campaigning have brought one hundred and seventy-five applications for membership from a group of men for whom the quota set was seven hundred. Since there are approximately two thousand Alumni

of the Institute now in greater Boston, the quota seemed modest enough, yet it now becomes apparent that it is not so modest as our graduates, some five hundred of whom must still be dragged from their caves.

Ever since the old Technology Club expired, our graduates have been without a convenient Boston meeting place. The Engineers' Club has of course been invaluable, but the Engineers' Club is not commodious and could not care for much larger a Technology contingent than it has at present. The new University Club has been planned on a generous scale for the accommodation of between three thousand and four thousand men. Technology, the largest Boston institution which has no clubhouse of its own, has the largest quota to fill, and when it fills it, Institute men will have once more an adequate social center on the ulterior side of the Charles. The new venture will not be a Technology Club, but it will be a club in which no institution will be able to play a more considerable or important part than Technology.

Institute men seem not yet alive to their opportunity. Amherst, Dartmouth and Cornell have all but filled their quotas; other universities have supplied a good percentage; but the graduates upon whom the heaviest burden lies have shown small disposition to come out of their shells — have supplied only one-fifth of their allotment despite the fact that the total membership is now over half the ultimate.

It is to be hoped that in our backwardness there is nothing pathological. We have never been noted for our urbanity; as a group, we have tended to show a certain monastic aridness to the rest of the collegiate world. A certain amount of social quietude is an admirable thing in these noisy times, but those who possess it face the continual danger that it will make recluses of them. You cannot be a recluse and an engineer at the same time, wherefore it is our hope that the lag in the growth of numbers we hope to contribute to this new venture is the result of the usual overpressure of work under which most of us suffer. If it is not, we face the possibility of having no University Club at all — to the consequent heightening of the suspicion that university men are much less successful as social enterprisers than the average run of Elks and Odd Fellows.

### The Plastic Age

The literary and dramatic "season" is still far from over, yet even now two former members of the Institute's Department of English have figured in it.

A playwright has come to production; a novelist has found a publisher. David Carb, instructor from 1909 to 1915, wrote (collaborating with Walter Prichard Eaton) of Queen Victoria, and Percy Marks, whose span was from 1915 to 1919, wrote (collaborating with no one at all) of a queen or so whose home life was very different.



The queens of Mr. Marks are incidental to his novel of college life, "The Plastic Age." They curse, they drink gin, they pet, and they come close to robbing Our Hero, young Hugh Carver, of his virtue — which are the reasons why Mr. Marks' book has begun to re-excite debate upon Youth, and How It May Be Saved from Going to the Dogs.

If this sort of cannonading re-commences (the guns have been silent for almost a year) no one will be sorrier than Mr. Marks. He loves the modern undergraduate with a love that is so soft, so cloying, so sentimental as to make his first novel quite inconsiderable as a contribution to literature. When his young men curse, you can hear the anxious author whisper, "He shouldn't have done that, I know, but he really doesn't mean anything bad by it." When they drink, he deprecates and suggests a war neurosis — later drawing a picture of remorse which would convince any assistant dean. When passion comes to the kindling point, Mr. Marks lets his own self-control go to pieces, batters down the guiltily locked door and saves the situation by changing the scenario — solely because he cannot bear to have the reader think that his boys and girls are bad.

Notwithstanding, the oppositionist critics of *The Plastic Age* seem to make two major protests. The first is, "College Men aren't like that" and the second "Even if such things are so, they shouldn't be put into a book." To these criticisms the answers are (1) No, probably not: the picture has been retouched and (2) Yes, they should if the author knows how.

Unfortunately, neither answer is complimentary to Mr. Marks. It can neither be said that he has written a true book, nor written a false one well. Distill from *The Plastic Age* its alcohol, precipitate from it its flappers, clarify it of its profanity, and you have left naught but the clear, viscid syrup from which Ralph Henry Barbour for the past fifteen years has been mixing his concoctions for young folk of from twelve to sixteen. Leave them in, and the scent of the synthesis is heavy upon you.

It would seem that, jacket blurb notwithstanding, the "Main Street" of American college life is still to be written. It will be a difficult book. Indeed, contemporary literature gives, as yet, no hint that it may not be an impossible book. The most likely candidate for authorship is a college teacher of English, yet we have a strong feeling that no man will ever make a mark in literature who has had to read freshman themes for more than a semester. There is something about them that gets into the blood.

**Come  
East,  
Young  
Man**

An idea for a university is at present a stadium. If that is in good repair, it doesn't matter about the library.

This is not announced as a discovery. The absorption of American colleges in

athletics has been tending toward such extremes for the

past ten years, that, within the past twelve-month, college presidents have come to notice it. They have told the trustees about it, and seemed not altogether sanguine over the future. Like sex, the problem has become a respectable topic of conversation. Blushes and silence are out of vogue.

For all that this new frankness has made us hardy, we admit to having read no more shocking a news dispatch than the recent one from Leland Stanford, Junior, University proclaiming Cheer Leading as a valid subject for a college curriculum, and giving notice that this university will henceforth allow credit to students taking the course.

The lecture system, it seems, will apply. "Bleacher Psychology," "Correct use of the voice," "Development of stage presence," "What a coach expects of the cheer leader" — these are a partial list of topics for consideration.

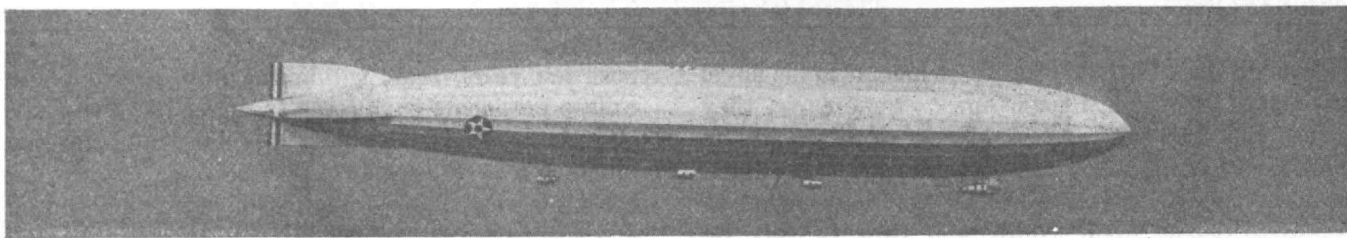
Grant an ability for Cheer Leading as a necessary part of the equipment of the educated man: we must even so quarrel with this conception of the subject. Are aesthetics nothing, even in Cheer Leading? Has it not its own problems of rhythm, dynamics, tone color, and is it not through these that the truly great cheer leaders of the future will, as students, come to appreciate the importance of their work? The Stanford approach seems just a bit empirical.

Yet a new science must develop slowly. Before the century ends, Stanford will no doubt look back upon its crude pioneering with an indulgent smile. The future will add to the complexity of Cheer Leading. New and exotic cheers must be discovered and perfected. The one solitary course must give way to many. There must be endowed chairs of Cheer Leading. We shall need text books. As the scope of Cheer Leading broadens, we must be careful not to yield to the temptation of slighting thoroughness of instruction. We must give attention to the minutiae without permitting students to forget the broad fundamental truths upon which their science rests. Before too long, we may designate the course as one in which a degree is obtainable. Nor should we overlook the exceptional student, who may wish to major in Cheer Leading for his doctorate.

Doctor of Cheer Leading. It could be conveniently designated as D.C.L. — which would have the additional advantage that you couldn't tell its holder from an Oxonian Doctor of Civil Law — if you weren't close enough to see the color of his hood.

After that has been accomplished, there is no need for Leland Stanford, Junior, University to stagnate. The football field holds other inspirations. One highly important adjunct is the water carrier. Save for the introduction of the galvanized iron pail, the water carrier's science has made almost no progress since the days of Gungha Din. A fascinating field here awaits the investigator.

Pioneers! O Pioneers!



© Underwood

# The Shenandoah and the Storm

*How it felt to be an observer on a runaway dirigible*

By CHARLES P. BURGESS

*Assistant Professor of Aeronautical Engineering*

In the night flight of the airship Shenandoah, torn from her moorings in a 60-mile gale, I was the only person aboard in the capacity of passenger, free from all part in the responsibilities and activities which fell to the officers and crew during the flight, so that I alone can tell from observation the tale of the cool courage and skill with which these men played their parts and which they are too modest to reveal.

The Shenandoah was secured by the bow to her mooring mast in a wind of about 45-miles velocity on the afternoon of January 16. I was on board as civilian scientist to investigate the bending forces in the hull under these conditions.

At about 6 o'clock the wind rapidly rose to a gale with gusts of extreme violence changing suddenly in direction.

The officers discussed whether an attempt should be made to weather the gale at the mooring mast or to cut loose in the storm which enveloped the ship. Suddenly a decision was forced upon them as with a roar which outdid even the incessant shrieking of the gale and the twang of metal and flopping of canvas, a side gust struck with a blow which ripped the fabric from the top fin and wrenched the ship so violently that the mooring shackle on the mast pulled the bow cap out by the roots and cast us adrift upon the gale.

The officers in the control car jumped for the handles which released the water ballast in the keel and signalled the engine rooms to start all six engines. Relieved of all ballast, the drifting and temporarily unmanageable airship rose rapidly. The stern lifted higher than the bow and Pilot Heinen shouted for everybody in the keel to move aft.

Even a passenger has weight and I ran aft with the

crew scrambling up the steeply inclined walkway along the keel. Then the motion was reversed and the stern went down and the bow up. We turned and moved forward again while the bow rose so high that we actually had to lie down upon the walkway and climb by holding to the side lattices. These alternate rearings of the bow and stern continued four or five times, making a marvelous see-saw, although one not likely to be introduced at Wonderland at any time within the next few years.

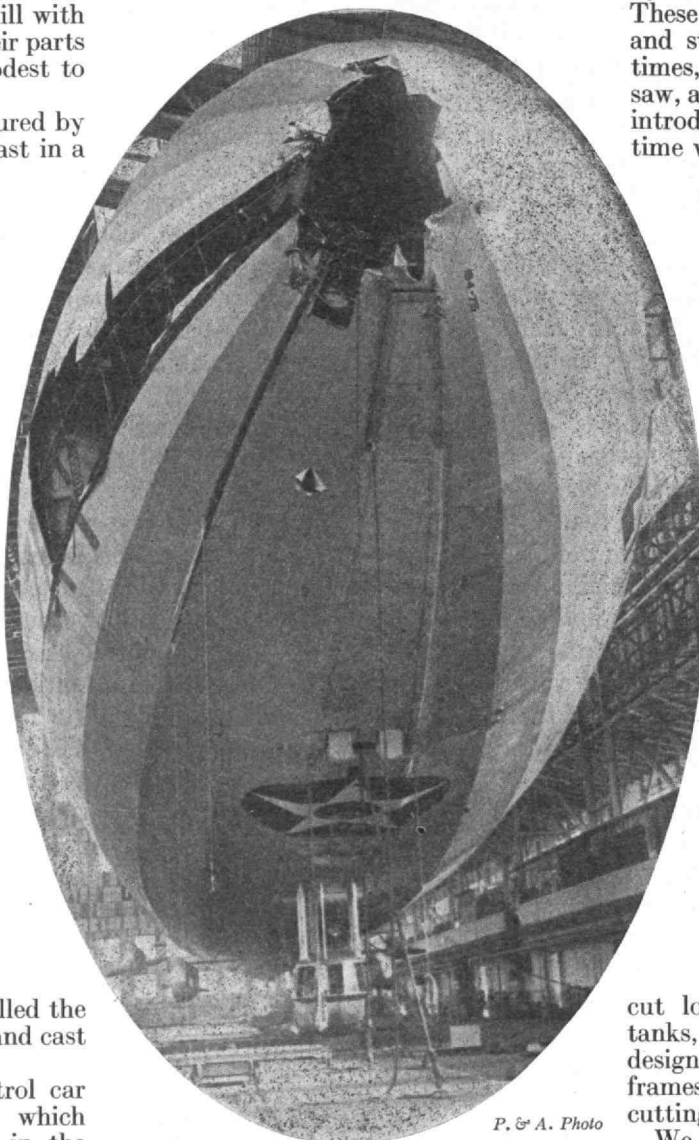
Meanwhile in each engine car one man (where normally there are two) was tugging at the big engine, and one by one each engine roared out the note so anxiously awaited by us in the keel.

The airship responded to the impulses of the propellers and soon had sufficient steerage way to answer to the vertical and horizontal rudders, and the mad plunging was stopped by the skillful hands operating the control wheels.

Meanwhile so much gas had escaped from the torn gas cells in the shattered bow that the initial lift produced by the release of the ballast was completely checked, and the ship was being held aloft partly by engine power. It was still necessary to lighten the ship and the first step was to cut loose three of the gasoline tanks, each holding 113 gallons and designed to be slipped from their frames in an emergency by the cutting of a wire.

We have not heard where the tanks landed. Luckily the New Jersey woods are extensive. Spare parts followed the tanks, including a spare cylinder for the big engines. Perhaps some ingenious farmer is striving to install it in his flivver.

The next task was to trim the ship by moving aft portable weights, such as oil cans and the remaining



P. & A. Photo

*The cost of repairing the Shenandoah will run into six figures, all to the left of the decimal point. That's what you call paying through the nose-cap*

spare parts. It was necessary to carry these loads along the ten-inch-wide gangway, alongside of which great holes had been torn in the fabric by the dropping of the gasoline tanks, so that one looked directly down to the ground below. Walking with burdens in such conditions was not easy, but it was unflinchingly done.

Thus, in a short time the airship cast so suddenly adrift in the gale at night, out of control, all ballast gone, the bow ripped open and gas pouring from the two forward cells, more than half the vertical steering surfaces gone, the engines at rest, no knowledge by the commander of the existing conditions of weight and buoyancy, only partially manned and mostly with inexperienced men at that, was placed in equilibrium and under control with all engines running.

An officer now demanded that I tell a funny story to pass the time. I could think of nothing to say except, "You fellows will be the heroes of all the girls in Lakehurst." Nearly all replied they had already thought of that, from which it is evident how the mind of man will run no matter what the circumstances.

Not having proved a success as a story teller, I went down to the control car and was delighted to find for the first time in which I had been in it in flight that there were so few people that I could easily see all that was going on. I remarked quite innocently on this advantage, and Lieutenant Kincaid was so tickled that he ordered the radio operator to inform Lakehurst that the control car was comfortable for the first time in any flight. This message broke the tension among the anxious officers at the air station.

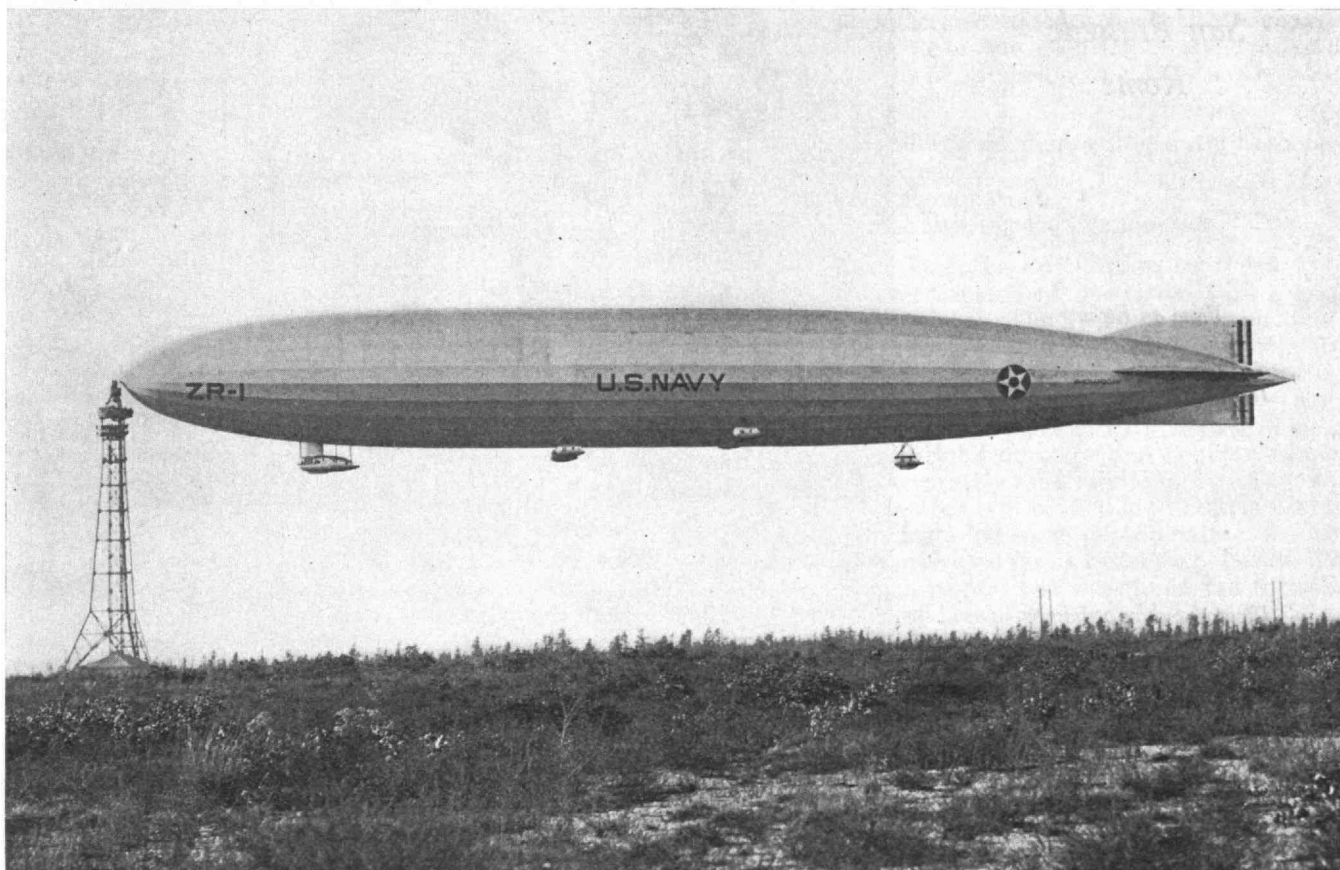
By 11 p.m. the wind had diminished and swung from south to west, so that the ship was no longer

driven along to the northward, and by heading a little to the left of straight into the wind we made a few miles to the southward crabwise each hour, although to observers on the ground below, the ship appeared to be hovering almost motionless, frequently giving rise to rumors that a landing was to be attempted.

In this manner the damaged ship was worked back towards Lakehurst, the wind gradually diminishing and becoming more favorable in direction. By 3 a.m. the ship was again over her base, from which she had made such a headlong departure seven hours before.

A successful and unusually expeditious landing was effected, and the damaged airship hauled into her shed. The Shenandoah, the first rigid airship designed and constructed in America, by Americans, and handled by a United States naval crew, under the direction of a German pilot, had in a badly damaged condition, accompanied by almost every imaginable adverse circumstance, successfully weathered a gale of a violence seldom encountered by an intact airship.

The future of the airship may be regarded from three points of view, military, naval, and commercial. The Shenandoah is a naval airship and from the naval point of view the large rigid airship is to be regarded as a fast scout cruiser combining to a higher degree than any other type of naval vessel the qualities of speed, endurance, habitability, and such fighting power as is necessary to press a reconnaissance home against the resistance of the enemy's aircraft, fast surface ships, mines, and submarines, but using speed and evasion rather than actual fighting power wherever possible. It is possible to construct at the present time rigid airships having maximum speeds of ninety miles



WHAT COULD LOOK MORE PLACID THAN THIS?

*Boston Transcript*

*Yet we are assured that the Shenandoah broke loose from her mooring mast only a few hours after this picture was taken*



per hour and a cruising radius (without refueling) of ten thousand miles. The airship alone of all aircraft has the quality of habitability and the crew are assured hot food and drink and dry quarters in all weathers and climates. On cruisers in the North Sea in the Great War the crew often suffered great hardships, especially in winter service when the ships were almost constantly running with water, and rolling or pitching heavily, and many of the defense stations required long hours of duty unsheltered from the gale or the lashing of the driving spray. The rigid airship can operate at sea in all weathers, including fog and darkness, where the airplane would be but a death trap for its crew.

As a military weapon the function of the airship is less precise than as a naval arm, but it may be expected that the large rigid airship will develop as an airplane carrier.

It is perhaps the commercial possibilities of the airship that are most interesting. Since the airship alone is capable of flying at night in reasonable safety it may be regarded as the only type of aircraft likely to become important in long distance transportation. In the

crew's quarters and the control car of the Shenandoah a glass of water may be placed on the table and no tremor will disturb its surface. How different from the jar and vibration experienced in a fast train! The Shenandoah is not provided with passenger quarters and the crew's quarters in the keel are very noisy, due to the beat of the engines and propellers. In the control car, on the other hand, when the forward engine is idle, scarcely any noise is perceptible, and it is apparent that a passenger car forward in the ship with the engines approximately a hundred feet or more further aft would be substantially noiseless, and certainly free from vibration.

Such a test as the Shenandoah received in the recent storm does much to justify faith in such craft for these non-military purposes. It is difficult to imagine how the ship could better have proved her worth. As Admiral Moffet well says: "It is a marvellous triumph for American industry, as well as for the navy."

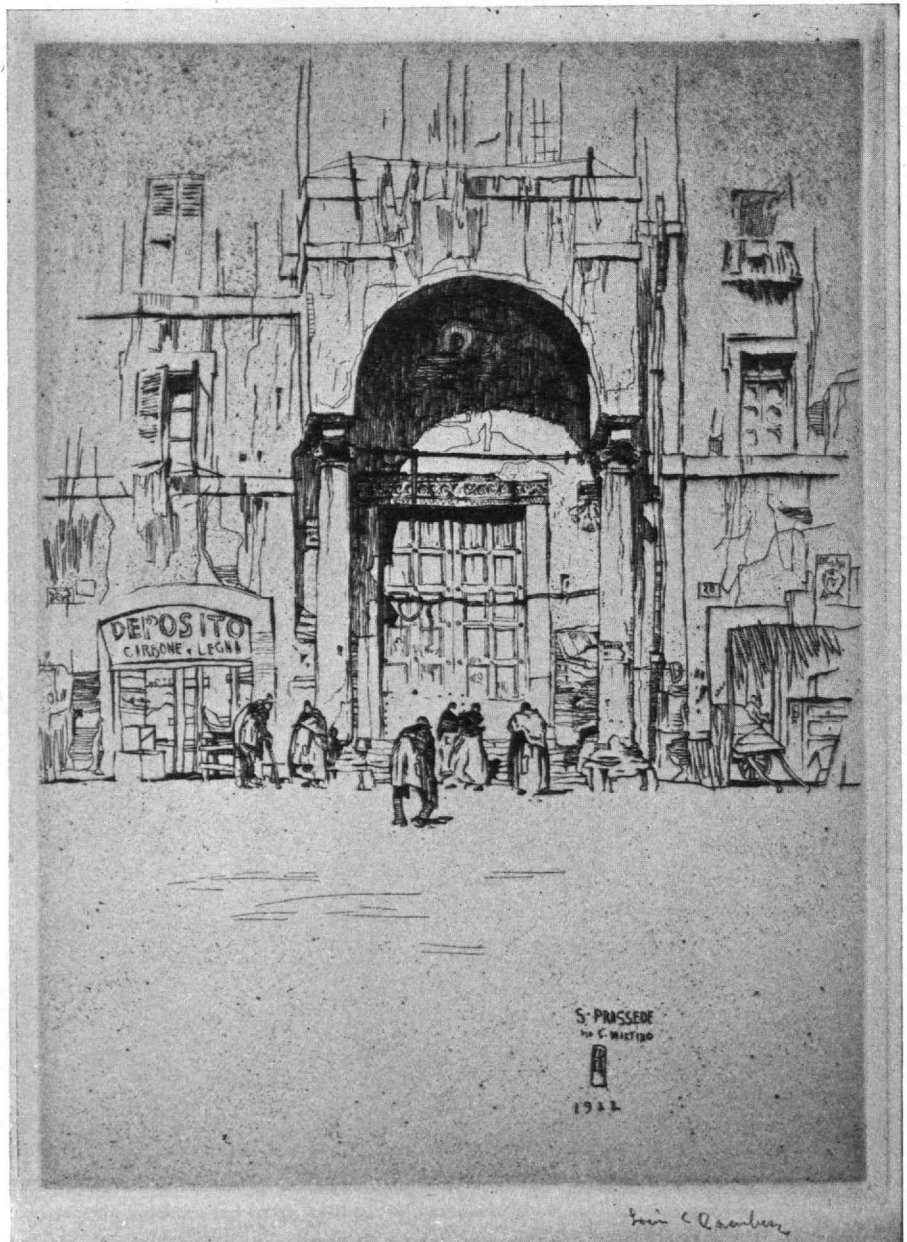
*Editor's Note: In a shorter form, this article originally appeared in the Boston Post. It is here reproduced by permission, with additions made by Professor Burgess, especially for The Review.*

## San Prassede Rome

From an Etching  
by

Louis C. Rosenberg, '13

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The Architectural Forum]



# Psychological Tests and Examinations

*From an address before the Association of University and College Business Officers of the Eastern States; closely paralleling an address at a recent meeting of the Council*



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HERBERT E. HAWKES

*The Dean of Columbia College was a speaker at the 103d meeting of the Alumni Council*

By HERBERT E. HAWKES  
*Dean of Columbia College*

It seems strange that a university man should be called in to address a group like this when the voice of the business man plays out. It is usually the other way around. This situation is not unlike a situation described in an anecdote of a cow that Mr. Schwab desired to buy for a farm. The farmer came to him and offered to sell him a cow. Mr. Schwab asked the pedigree of the cow. The farmer said he did

not know if he had one. Mr. Schwab said, How much milk does she give? The farmer said he never measured it, but he knew she was a kind, good-natured cow, and if she had any milk to give, she would be glad to give it to him. So I talk about Psychological Tests.

The whole question of examinations is very much in the public eye now. In fact, the question might be asked, What is the use of examinations anyway? Students sometimes think that it is an attempt on the part of the older generation to keep the younger generation from competing too soon. In my own mind examinations do satisfy a very important educational purpose. I have yet to see a man who occupies an important position of some kind who is not called upon to get to a certain place at a certain time to deliver the goods, and it seems to me that any educational system which does not give men the opportunity to meet certain requirements at certain times and certain places, deprives them of a certain part of their education. The person who carries the greatest responsibility comes up to these tests as well as those who carry the least. Therefore I can see no reason why anybody should be excused from an examination.

But on the institutional side, the question is quite a bit different. Examinations are necessary in order to distinguish those students who should be awarded degrees from those who should not be awarded degrees. It is a great pity that students or teachers need to think about degrees. Education is purely a matter of the spirit, while degree-getting is a matter of requirements. But a man who is eager to get education is willing to take the requirements for the degree.

Every university attempts to establish requirements for a degree close to the educational needs of its students. The students find sometimes the requirements for the degree are contrary to their needs. But to authorize special treatment for such cases requires more

wisdom than faculties possess. So degree-getting comes down to meeting requirements for degrees in that institution and that means examinations. In this discussion it is necessary to assume that the examination is a part of our educational system, and it is worthwhile to make it an accurate instrument. The well-known scholar who stated that the only proper method of reading examinations is all the time to keep a paper in the air would not be interested in this subject. Neither would the professor who advised one of his instructors that every moment spent by him outside of his class-room in thinking of his teaching was time wasted. If we admit as college administrators that we must reject, promote and graduate students, an elementary sense of justice demands as accurate a method as we can devise for reaching the various decisions. That means accurate examinations.

This subject is receiving careful attention from many able investigators in an attempt to supplement personal estimates of the instructors regarding their students by some more objective criterion. In Columbia College we have experimented with certain new types of examinations for five years. We now have a large body of data for we have not set the machinery up and let it run by itself, but have checked it up so that now we have a considerable body of data stretching over considerable length of time for a group of between 2,500 and 5,000 students. Consequently, we feel justified in drawing a few modest conclusions.

In the first place, we attacked the problem of admission to college. For the past few years one of our alternative plans of admission to college has consisted of four elements:

1. Certification from high or preparatory school.
2. Character record.
3. Physical examination.
4. Thorndike Intelligence Examination.

Roughly speaking, the certification from the school indicates whether the student has covered his preliminary work adequately. The Thorndike Examination is supposed to indicate whether he has the native ability to profit by a college education. Just what it measures I do not know. Whether it is intelligence or not is hard to say until one defines exactly what one means by intelligence. But I do know that it indicates more definitely and accurately than anything we are familiar with, whether the boy will succeed in Columbia College. It does not indicate industry, determination, financial resources, or honesty, so far as I can see. Hence, boys who have a high mental test sometimes fail to realize their possibilities because of failure in one of these qualities of character.

During the first two or three years of our use of this test we experimented a good deal in order to find out how far it could be trusted. We repeated the test many times for the same individuals in order to determine what variation might be expected on different days and under different conditions. The variation in score for the same boy is found to be slight; in fact, it is only three or four points on a scale of 120. Even now we repeat the examinations for boys who are physically indisposed or under any kind of temporary

handicap on their first trial. We also frequently repeat the test when the first result shows marked variation from what the school record, the principal's recommendation, or the personal interview would lead us to expect. But the boys whose second trial differs materially from their first are very few. Ability as indicated by these tests seems to be quite invariant for a given individual.

The accuracy of the test in predicting college success is demonstrated by a wealth of experiments and statistics which we have gathered.

The correlation between two-year (Freshman plus Sophomore) scholarship scores in Columbia College and the scores in the three criteria for admission is as follows:

Thorndike Test . . .	.67
Regents Exams. . . .	.64
School Marks . . . .	.26

Most of the senior class graduating in 1923 took the Thorndike Test as a part of their entrance examination to college. It turned out that 60% of those making Phi Beta Kappa were among the highest 10% on the Thorndike Test four years before.

At the other end of the scale the figures are also interesting. During the year 1921-1922, 254 individuals, or about 12% of the entire student body, were on probation by reason of poor scholarship, for one or more half-sessions. Of course, the reasons for probation vary widely for different men. Lack of ability, laziness, too much work for support, too much time spent in commuting, over-attention to student activities (study is never included among "student activities") all contribute to swelling the probation list. It is, therefore, significant that only one-fourth of the men on the probation list were above the median of the college on the Thorndike Test. Practically no men with very high Thorndike marks were on this list.

At the end of each Session it is customary to write a note of appreciation to each student in the College who has done his academic work with distinction. A grade which, if maintained for the entire course, would entitle a student to consideration, for Phi Beta Kappa usually warrants such recognition. During the year 1921-1922, 415 students received such letters. Of these men only 16% were below the median of the college on the Intelligence Test.

I could continue giving figures until we all reached a state of complete exhaustion. At Columbia, we have realized that we were trying an educational experiment. We did not know how it would turn out. Consequently we have left no stone unturned to discover the facts. These facts all point in one direction, and indicate that a plan of admission that involves the Thorndike Test as one of its important features affords us college students far more competent to do the work we require than any method that we know.

Since the introduction of the Thorndike Test the percentage of men who are forced out on account of poor scholarship has been cut in half, although our scholarship requirements have been lifted during this interval. By this method, therefore, we are spared the unfortunate experience of dropping a large number of men because of an inaccurate estimate of their competence made on their admission to college.

It has been observed earlier in this paper that the entrance examination marks possess substantially as high prognostic value of college success as do the results of the Thorndike Test. What advantages, then, in using the Thorndike Test? I will mention three:

first, the average time consumed by the student in taking the entrance examinations averages about 15 hours, while the Thorndike Test requires only three; second, the expense of preparing and reading the entrance examinations is very much greater than that involved in the shorter test; furthermore, only a few colleges admit by examination alone. It is, therefore, very desirable to provide some simple test which enables one to compare the academic promise of the various types of students presenting themselves. For example, in Columbia College sometimes one-half of our students come from New York State, and consequently take the Regents Examinations. Others come from more remote points and either present examinations of the College Entrance Board, or merely the certification of their preparatory school. The mental test enables us quickly to obtain a fairly accurate and comparative idea of the entire list of applicants.

In comparing two sets of data like the results of the Thorndike Test and college accomplishment any correlation that is higher than the reliability of either set of data would be illusory. We have made a very careful study of the reliability of our college marks. I shall not pause to give in detail an account of the many angles from which we have attacked this problem. But the upshot of it all is that the reliability of the mark that indicates college success seems to be about .70. Hence in getting a correlation of .67 between the Thorndike Test and the college marks, we are getting all that could be expected from the data that we are obliged to use.

This discovery stimulated us to attempt to increase the accuracy of our college marks by modifying the type of examination employed. The new type of examination consists, as many of you know, of numerous so-called true-false statements, completion tests, and recognition tests. Although they are much more difficult to prepare, they possess many virtues that the more usual type of examination does not.

The usual essay type of examination in history or economics, for example, may fairly be said to be easy to prepare, laborious to read, difficult to score, not co-extensive with the subject matter of the course, accompanied by irrelevancies as necessity for writing long answers, coachable to a high degree, lacking any possible unit for a marking scale. It does, however, serve a useful purpose and seems to give the instructor who knows a student a fairly clear picture of his state of mind at the time of the examination. The new type is, on the other hand, laborious to prepare, somewhat expensive to print, almost entirely objective, non-coachable, co-extensive with the subject matter of the course, and easy to grade. In fact, the grading may be done by clerks.

This type of examination has been used in most of the Departments of Columbia College on application by them, and once used has never been given up. It has raised the reliability of college marks in the various departments from the range of .35 to .67 up to the range of .75 to .95, with an average at about .85. In the general opinion of the better students it is a much more just and satisfactory examination than the traditional type. The only man who complains is the poor student who laments the loss of opportunity to discourse on what he happens to know rather than on what the instructor desires to find out.

The examination has also resulted in a marked increase in attention to academic duties on the part of students. I can illustrate its effectiveness by experi-



ence gained in a course in English in which a great deal of outside reading is required. The traditional kind of examination in this course is naturally of the "essay" type. Ten or a dozen questions are asked, each calling for the writing of a little essay of a page or two on some aspect of the course. Now I think that it is recognized that although such an examination is very useful for certain purposes, it is quite ineffectual in finding out whether the students have actually done the required reading.

I do not believe that the teacher lives who can obtain from a group of students accurate information as to whether they have read all of a list of required books by means of the essay type of examination. On the other hand, the student does not live who can pass a well-made true-false examination on a book if he has not read the book. In a large course in English last year, shortly after the new type of examination was introduced, the librarian and the manager of the book store inquired of the Professor what had happened to his course. Both reported a quite unprecedented drive on the part of the students to borrow, buy, or steal the required books.

It should be added that so far as we can see, this type of examination does not by any means entirely replace the old type. Questions of the essay type are retained in almost all of our examinations to test powers of synthesis, exposition, and knowledge of the sequence of events. In courses where this is the main interest, as in courses in English composition, or in certain courses in History, Philosophy, or the languages, the new type of examination may be of little use. We do not yet know. But we are gathering data and gradually reaching conclusions.

In Physics, for example, the new type of test has been supplemented by a few rather long and carefully chosen problems, which test the power to carry out a process of sustained and consecutive reasoning. It is interesting to observe, however, that the correlation between the results of the true-false part of the Physics examinations and the results of several problem tests is fully as high as that between the problem tests themselves, indicating that the true-false examination gives as accurate information regarding ability to solve problems as any single problem test.

It may be that a test in English can be devised involving short questions on vocabulary, grammar, and constructions that will better test the ability to write than the actual writing of a single composition. We are working on this problem. We are certain that any one composition is a very inaccurate index of ability to write, and that a single composition read by only one reader is even a poorer index.

It should be emphasized that the preparation and management of this type of examination is a somewhat technical matter. Several times individual Professors have attempted to organize the true-false examination without any expert advice, and every time that has come to my notice the results have been unsatisfactory. But when these same Professors have prepared and graded their examinations under the advice of our Professor of Collegiate Educational Research, satisfactory results have followed.

Up to the present I have mentioned the use of the new type of test first, as a part of the examination for admission to college, second as a content examination on courses pursued in college. Both of these experiments have been in use long enough to permit us to estimate their value with some assurance. We are

at present engaged in the study of a third application of the new type of test which has not progressed as far as the other two. I refer to the so-called placement examination.

Colleges that admit largely by certificate inevitably find a considerable amount of discrepancy in the fitness on the part of students from different schools, to take up the college work in specific departments, even though their records on paper are similar. For example, two years' work in French in one school means something quite different from two years in another. It is, therefore, important that even after the student has shown capacity for college work, and an acceptable certificate, some means should be devised for placing him in each of his college courses at the exact point which his preparation justifies. Even these institutions which admit entirely by examination find that the problem of placement is by no means accurately solved by the entrance examinations. If, however, a college is employing a method which admits students who are always successful in the work which they undertake, and always fit exactly in the college course which they enter, then the problem of placement which I am about to mention is not a live one for that college. But even for such an institution it might be worth while to study the question and find out whether the same happy result could be reached by a simpler means.

The needs of the situation can best be illustrated by the subject of English composition. Competence in the use of the English language implies acquaintance with a reasonably large vocabulary of words, ability to spell these words correctly, a knowledge of their proper construction in phrases and sentences, and facility in organizing them in a piece of sustained composition, either narrative, exposition, description or argument. The easiest and the worst way to treat the question of spelling for example, is to fail the student who misspells a certain number of words in his entire examination. This method, which has been in common use in many colleges, has encouraged the humiliating practice on the part of many an honorable but discerning student of taking an account of stock of the words that he knows he can spell even when under an emotional strain and confining his literary efforts to that restricted vocabulary. A system that results in such a practice certainly merits attention.

It is proposed to meet this condition by asking each student who is admitted to college to take a placement examination, or set of examinations in English, which will follow the lines of cleavage indicated above. By means of a spelling test, a vocabulary test, a construction test, and a composition test it is anticipated that any weakness of the student will be discovered and isolated. If he cannot spell but is competent in the other matters of composition, he will be required to take, without credit, a course in spelling, in order to strengthen his weak spot. This plan seems more intelligent than the rejection of the student without either giving him a diagnosis of his trouble or affording any means for overcoming it which is suited to his infirmity. It should be noted that these examinations are given only to students who have been admitted to college. It is, therefore, an attempt to analyse in a very searching manner the educational status and needs of the Freshmen.

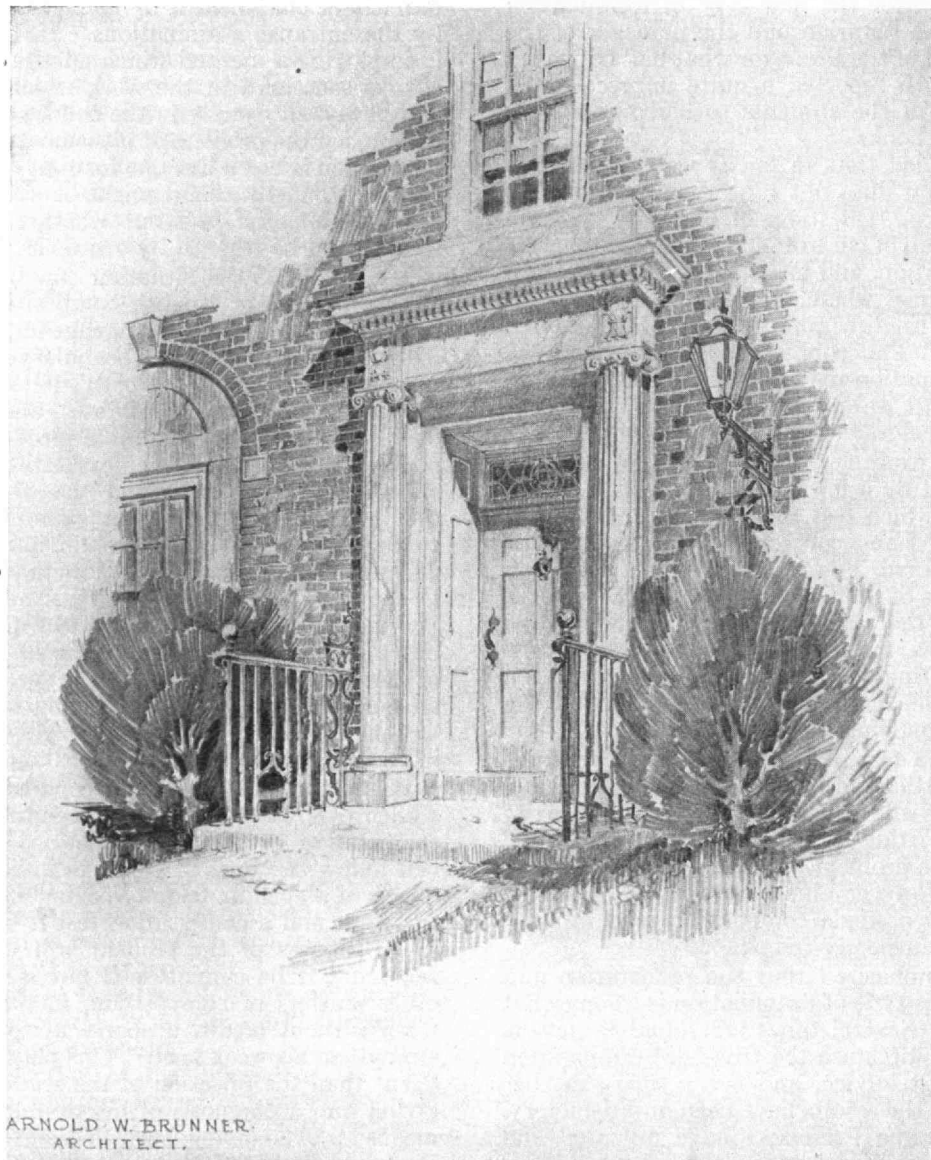
A careful study of the results of this examination will be made in the attempt to discover whether any particular type of failure possesses peculiar significance. If, for example, it should turn out that a meager vocab-

ulary, inaccurately understood, uniformly accompanies a low mental test, poor work in College English and accomplishment of a low order all along the line, a result of great importance will have been attained.

These placement examinations were given experimentally in September, 1923, in French, German, English, and Mathematics. We shall study the relation of the results obtained to the college accomplishment of the students, with the expectation of making similar examinations (to be given next September) the basis for placement in sections of students entering college.

In presenting an account of these studies, it is important to emphasize their experimental character. Our experience at Columbia has been confined to the

Thorndike Test in the work of admission. Many institutions have used other tests with varying success. For example, the short Army Alpha Test is often used with college students. So far as my information extends, these shorter tests which are prepared for a different purpose are of very little use in collegiate work. At any rate, it is most dangerous to adopt a new and somewhat novel method like the new type of examination without the most open-minded and critical study of the results. This we are attempting to accomplish in Columbia College, in the hope that the outcome will make it possible to carry forward the difficult and complex enterprise of college education with more assurance and greater intelligence.



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ENTRANCE DETAIL: MEN'S DORMITORIES AT DENISON UNIVERSITY

*By Arnold W. Brunner, '79*

# Factors in Railroad Work

*A slightly shortened transcript of the sixth of the Aldred Lectures:  
delivered at the Institute on February 1*

The intimate relation of railroad transportation to the life of all industry, as well as all individuals, justifies, if it does not necessitate, its regulation by federal and state authorities. A study of railroad regulation in the United States shows that there have been three distinct periods, in each of which public policy has exhibited a different conception of how the carriers should be treated in the public interest.

Railroad construction in this country may be said to date from 1830. By 1890, 163,597 miles of road had been built; from 1890 to 1910, 76,696 miles were built; since 1910 there has been comparatively little new construction, the present road mileage being 250,480 miles. In the early years there was not only complete freedom from regulation, but actually a definite policy of encouragement to railroad promotion. Great inducements, such as land grants and other bonuses, were held out to individuals and companies engaged in railroad construction. The policy of encouragement prevailed practically until 1887, when Congress passed "An Act to Regulate Commerce." This marked the beginning of the second period, which became one of increasingly intensive regulation of railroad financing, operation, and rates. The act created the Interstate Commerce Commission and prohibited unreasonable and discriminatory rates. But the first law which gave the Commission power to fix rates was the "Hepburn Act" of 1906, which also increased penalties and forbade discrimination and rebates in the form of passes or unfair allowances to shippers. This Act has been amended from time to time, and is the basis of our present Interstate Commerce laws.

State regulatory statutes had been multiplying rapidly since the eighties and they, together with the growing intensity of federal regulation, began, during the first decade of this century, seriously to affect railroad prosperity. The effect of this progressively restrictive legislation was substantially to increase the cost of railroad operation. A concurrent circumstance of great importance was the gradual increase in wages and the prices of materials and supplies. But the regulatory bodies which were imposing more and more conditions adding to operating cost did not take these things into consideration when fixing rates, so that diminishing rates and increasing costs had by 1909 created a serious situation. This led to the applications for rate increases in 1910 which were denied by the Interstate Commerce Commission. The denial constituted a serious and unusually widespread manifestation of a restrictive policy which rapidly discouraged and slowed down railroad promotion and expansion, and finally stopped it altogether. Railroad credit became so impaired that new lines could not be financed successfully, and improvement and enlargement of facilities could not keep pace with the growing needs of commerce.

By 1915 it became apparent that the public interest was not being well served by this drastic and hostile policy, and Congress began what proved to be the most thorough investigation ever given the transportation question by any legislative body in this country. The War resulted in the roads being taken over and operated by the Government from January, 1918, to March, 1920. It gave opportunity for an experiment in Government operation which resulted in a practically

By RALPH BUDD  
*President, Great Northern Railway*

unanimous public sentiment in favor of a return to private management.

The investigation begun by Congress in 1915 was resumed after the War, and came to fruition in "The Transportation Act 1920" which became effective March 1 of that year and which marks the beginning of the third period.

The Transportation Act attempts, on the one hand, to insure to the public uninterrupted service and, on the other hand, to insure the railroad employees against any disadvantage from the assumed fact that they should not desert their posts. A Federal Railroad Labor Board is established to hear and decide upon differences and controversies between employer and employee. It may make findings and issue orders, and may publish the facts relating to violations of its orders; but it is without authority otherwise to enforce them. Public opinion is relied upon largely to bring about the acceptance of the Labor Board's orders by both parties. Notwithstanding the fact that one of the most expensive strikes ever experienced has occurred since the Labor Board came into existence, it is fair to assert that the Labor Board does constitute a considerable guaranty that transportation service in the United States shall not be interrupted by strikes, and that it does guarantee to the employees that they will not be obliged to accept any reductions in pay or changes in working conditions which the railroad managements may attempt to force upon them without review and approval by an impartial tribunal.

Reduced to tabulated form, the following are some of the most important requirements with which the railroads must comply under the laws at the present time:

*They must not, without first obtaining permission:*

Change freight rates and passenger fares.

Decrease wages of employees.

Change working conditions of employees.

Abandon unprofitable train service.

Issue any new securities.

Remove any existing lines.

Construct any new lines.

Consolidate.

Have same directors or officers as another carrier even though that carrier is owned or controlled.

Operate ships on the Great Lakes.

*They must not:*

Operate ships through the Panama Canal.

*They must:*

Detail purposes for which funds realized from sale of securities are expended.

Surrender one-half of all net earnings in excess of 6 per cent on their value.

Install experimental devices when ordered.

Make a great number of very elaborate monthly and annual reports covering financial results, operating statistics, boiler inspection, accidents, etc.

Publish tariffs according to strict rules.

Change basis of dividing through rates between carriers when so ordered.

Furnish switch connections.

Various bureaus of the Interstate Commerce Commission have charge of administering many of these



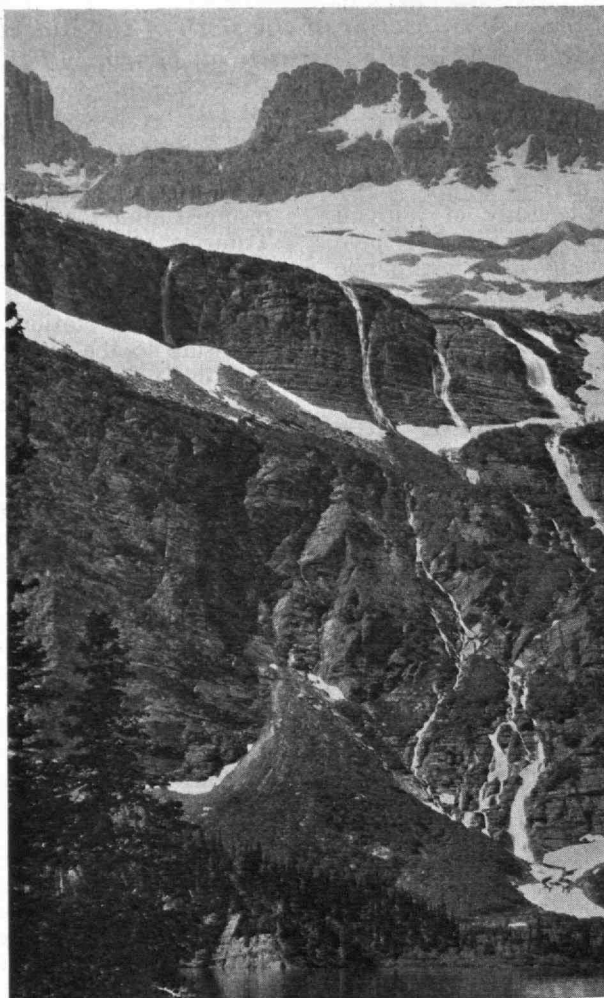
requirements, such as hours of service, methods of keeping accounts, application of safety devices, observance of air brake requirements, condition of locomotives, and other details. The bureaus enforce these regulations by means of inspectors scattered over the country, and the railroads are penalized by severe fines for violations.

In addition to federal supervision, almost every state has its Public Service or Railroad Commission to enforce innumerable statutes. These state commissions, as a rule, have power to order the stopping of trains at particular stations, the improvement or enlargement of station buildings and other station facilities, and also to stipulate the extent and kind of service to be provided.

These, in outline, are the conditions imposed upon the railroads. Working under and in compliance with them, the task of railroad officials is to find a way to satisfy the transportation needs of the country.

What may be called "external" problems are those arising between the Government regulatory bodies and the public generally, on the one hand, and the railroad managements on the other. For example, there is constant pressure to reduce rates. Information must be furnished to the Interstate Commerce Commission showing the effect of these proposed reductions and why many of them cannot be made. Adjustments of rates often are necessary and always are being made to meet varying needs and circumstances. A large share of the time of some of the officers and other employees is constantly given to such questions. Another example is the valuation of the railroads by the Interstate Commerce Commission, which has been in progress for the past nine years. Hundreds of millions of dollars are involved here: indeed, the solvency of probably more than half of the railroads hinges upon the findings in this undertaking. Some idea of the extent of this work may be gained from the fact that about \$90,000,000 has been expended upon it, about three-fourths of this sum having been spent by the carriers and one-fourth by the Government. And it is not nearly done. The alarming increase in taxes, and especially the tendency in some localities to pass an inordinately large part of this burden to the railroads, requires that the matter of taxes be given the most careful attention. In some cases, taxes amount to over 10 per cent as much as all operating expenses of the railroad.

In addition to these subjects, a large amount of time is given to the keeping of accounts and records in the



© Hileman  
GRINNELL GLACIER AND THE GARDEN WALL  
*Railroad pioneering met such obstacles as shown in this view of the Continental Divide taken in Glacier National Park*

prescribed manner, and to the making of numerous reports. A large force is also engaged in inspecting and reporting on safety devices. I mention these details only to indicate in a general way the things that must be done by the railroads, extraneous to the productive management of their properties, and of a kind that the ordinary business does not need to consider. These so-called "external" problems of a railroad threaten its very life.

But we are more concerned here with those problems which the officials are free to deal with according to their own discretion, and which may be called "internal" problems of management. In handling these "internal" problems with an endeavor to reduce the cost of railroad operation lies the greatest opportunity of the railroad official for the exertion of individual initiative. Whether this field shall be unduly restricted or not has a controlling influence upon the attractiveness of railroading as a life work.

Within the limitations prescribed by law, the officials of each individual

railroad must strive to get and keep the cost of operation down to a point where the rates permitted will yield a fair return upon the value of the property used for transportation purposes. Since rates are based on the aggregate requirements of large groups of carriers, the concern of the individual road is its cost of producing transportation as compared with the average of such cost on the roads in its rate-making group.

The principal divisions of railroad operating expenses are: Conducting Transportation, which covers the direct cost of train operation such as dispatching trains, wages of crews, fuel, and locomotive and car supplies, and makes up about one-half of all operating expenses; Maintenance of Way and Structures, which covers the maintenance and repair of all fixed property and accounts for about 18 per cent; Maintenance of Equipment, which covers the upkeep of locomotives and cars and makes up about 27 per cent; Traffic, General, and Miscellaneous Expenses make up the remaining 5 per cent.

Freight service is by far the most important item to a railroad, accounting for almost four times as much revenue as passenger service on the typical road, although this proportion is somewhat less in some regions, notably in New England. Furthermore, the expense of passenger service is largely fixed, since the trains are run on regular schedule whether the volume of traffic is large or small. On the other hand, in carrying freight, the amount of train service is increased or de-

creased to accommodate the volume of traffic, and it is in this field, consequently, that there are the greatest possibilities for controlling costs.

In freight service, a railroad manufactures train-miles, but sells ton-miles. The revenue received is dependent not only on the tons of freight handled, but also upon the distance carried, and the product of each ton carried by the miles it is moved gives the ton-miles produced in that movement.

The common units of cost looked upon by operating officials as indices of relative operating efficiency are the cost per net ton-mile of conducting transportation, and the cost per net ton-mile of all operating expenses, including transportation.

Freight transportation cost may be reduced by:

- (a) Increasing the size of trains.
- (b) Reducing train delays on the road and at terminals.
- (c) Reducing the amount of switching.
- (d) Avoiding congestion.
- (e) Heavier loading of cars.
- (f) Careful use of fuel.

Size of trains may be increased by reducing the ruling gradient, by using larger locomotives, and by running trains more slowly. It is a nice problem to determine the extent to which train speed may be increased at the expense of tonnage; and this problem has become very different under time-and-one-half allowances and the Sixteen Hour Law. In this also is involved the speed at which fuel consumption will be at a minimum.

Especially on roads having comparatively light traffic, and consequently long stretches of single track, and on roads with heavy gradients, the question of train delay becomes very serious.

Determination of which additional facilities should be provided and when, is made in each case independently, because scarcely any two cases present identical conditions. Not the least of the complications, especially on western transcontinental lines, is the sudden and violent fluctuation in traffic, which may be three times as dense in October or November as it is in February. Perhaps there may be need for a certain facility for six weeks in the fall of the year. It often becomes a difficult question to determine whether the advantages for that short period justify the capital charges and upkeep for a facility not needed during the remainder of the year.

It is estimated that a freight car stands still 85 per cent of its life, and spends only 15 per cent moving between terminals. Some of the time it is standing is while it is undergoing repairs, but even then it must be reckoned with in yard operation, for it must be switched out of the train to the repair tracks or shops and back into service again.

Terminals detentions besides repairs are: those at loading and unloading points; those at transfer points; and those at operating engine terminals. Prompt loading and unloading of cars to reduce terminal delays at origin and destination, and elimination of unnecessary delays at transfer points require coöperation with shippers and with other railroads. Here is a great field for constructive work. The successful attention given to it during the year 1923 was in no small part responsible for the improved car supply and the resulting improved operating efficiency.

The loading of equipment to its full weight or cubical capacity is very important and will result in great economies. For example, it costs approximately 50

per cent more per ton to haul freight if loaded in car loads containing but 15 tons than it does if loaded in car loads containing 50 tons each. The saving in equipment is tremendous when we realize that a gain or loss in loading of one ton per car represents a difference of 80,000 freight cars in transportation service daily throughout the United States. Car load minima are fixed by tariff. Shippers may, however, be induced to load cars more heavily and good results have been obtained from efforts in this direction.

One other matter of high importance is supervision of the loading, stowing, and handling of less than car load freight and the supervision of the handling of car load freight with the object of avoiding loss or damage and the resulting claims by shippers. Here is a fertile field for constructive effort.

The cost of fuel is about 12 per cent of the total operating expense, varying considerably with the geographical location of the road. Careful supervision of the purchase and handling of coal offers opportunity for great savings because of the large amounts involved. The use of specifications stating chemical content and B.T.U. requirements seems to be replacing the practice of specifying merely the districts or the mines from which coal shall be supplied. Expert firing and exact recording of performance are two of the methods used in saving fuel.

Another field for initiative is that of service on branch lines where traffic is very light. The communities reached by branch lines require a service both for passengers and freight. To provide a less costly method of transportation over lines of light traffic, experiments are being made with self-propelled passenger cars, and some are being operated with fair success. There is opportunity here for ingenuity on the part of operating officers, and the stake is large.

These are some of the ways in which the cost of conducting transportation may be reduced. As that item represents about half of the total operating expense of a railroad, it affords the largest single field for exercise of individual initiative, and the opportunity for economy in it is probably greater than everywhere else combined. Some of the things mentioned are quite obvious; others may seem trivial; but when one thinks in terms of cost per ton-mile and when he realizes that 400,000,000,000 ton-miles are made on the railroads of the United States each year (which means that a saving of one half a mill a ton-mile would produce a saving of \$200,000,000 a year) the importance of anything increasing economy in ton-mile cost is apparent.

Maintenance of Way and Structures and Maintenance of Equipment together represent nearly as large an expenditure as conducting transportation. Maintenance of Way practice is fairly well standardized. The Proceedings of the American Railway Engineering Association, including the Manual of Practice, have promulgated widely the standards in use and those recommended, with the result that all of the principal railroads are standardized along similar lines, the variations being for adaptability to conditions prevailing on the different properties. The use of improved devices, like better rail joints, more and better rail anchors, treated ties, tie plates, etc., has reduced maintenance cost. So have the more careful drainage of roadbed and more careful selection and preparation of ballast.

The extent to which these improvements are carried out depends upon the policy of the management, the kind and density of the traffic handled, and the financial



ability to adopt standards which represent ultimate economy, but at the expense of relatively large capital expenditures. The study of steel rail manufacture is itself a huge problem.

Oxy-acetylene welding gives an example of adapting a machine shop appliance to track work. For several years frogs and crossings have been repaired in place by this process, with great saving. More recently, battered rail-ends have been rebuilt by welding, and obsolete rail-joints replaced by those of modern design to prevent recurrence of the trouble. In this way, extensive re-laying of rails has been deferred for several years and a tremendous economy realized.

Another improvement in maintenance practice is the extensive use of motor cars in place of hand cars for track and bridge forces. This has reduced the time spent en route to the place of work and conserved the strength of the men for productive effort. It has also made it possible to lengthen sections, thus reducing the number of gangs and the cost of maintaining headquarters. In all of these things, of course, judgment must be used to make sure that the saving justifies the expenditures.

Maintenance of Equipment constitutes more than one-fourth of the total cost of operating a railroad. Its cost has advanced more in the past ten years than either Maintenance of Way or Transportation, which perhaps justifies giving it special attention and study. Shops, of course, represent an immense investment. It may very well be that the difficulty of raising new money and of showing with exactness and certainty the savings to be made from a proposed improvement, have prevented many railroad shops from being kept entirely up-to-date.

Cost of locomotive repairs may be reduced by use of machine tools of modern type. Another process which saves money is autogenous welding. In most shops it consists of three different kinds; oxy-acetylene, by which remarkable pieces of work are done, such as welding broken cylinders intact without removal from the locomotives; electric welding in fire boxes of locomotives, where formerly it was necessary to go to the great expense of riveting patches; and thermit welding, whereby broken frames can be welded without being removed.

Locomotives of modern type may be equipped with many auxiliaries, such as superheaters, stokers, feed water heaters, booster engines, grate shakers, electric headlights, etc., which increase the cost of maintenance but which, if suited to the requirements, increase the ton-miles per unit of expenditures and thus reduce the operating cost per ton-mile. Their net value can be determined only by continued expert investigation and careful experiment. Technically trained men are pre-eminently fitted for undertaking such work.

In seeking ways to reduce operating costs, the need for additional capital is encountered at every turn. The lack of it, or the difficulty of obtaining it, has presented the realization of many economies which every railroad executive knows he could make if the money for improvements were available. It is not uncommon to hear a railroad executive bewail the fact that the law contemplates that the railroads shall earn  $5\frac{3}{4}$  per cent on the value and takes from them half of what they earn in excess of 6 per cent, yet since the law became effective the Interstate Commerce Commission has guessed so poorly on what freight rates and passenger fares should be in order to yield the contemplated return that the roads as a whole

earned less than 1 per cent in 1920,  $3\frac{1}{4}$  per cent in 1921,  $4\frac{1}{4}$  per cent in 1922, and probably  $5\frac{1}{4}$  per cent in 1923. On the other hand, higher levels of interest rates following the War, together with the uncertainty of return on railroad investments, have made it necessary for the railroads to pay an average of about 6 per cent for borrowed money; and have made it impossible, except in extraordinary and isolated cases, to obtain railroad funds in any other way than by borrowing. This is true, but is a condition not wholly without virtue. The necessities of the railroad situation following the War have compelled all possible ingenuity and initiative on the part of railroad managements, and it seems fair to say that some, at least, of the benefits would not otherwise have been realized. An analysis of the financial dilemma just mentioned may show it not altogether so hopeless as the bare statement indicates. Of course, to borrow money at upwards of 6 per cent interest to improve property which government regulating bodies permit to earn only 5 per cent would be a short cut to receivership. Certain improvements, such as grade separations, paving, and safety appliances on equipment and roadway required by ordinance or statute may not give much return, but railroad managements can find an abundance of opportunity for making additions and betterments that will yield a return double or triple the interest rate, high as it is. A common plan is to fix an arbitrary rate, say 15 per cent, which the estimated increases in net income will show upon the new capital invested, as a condition for approving the expenditure.

Instead of dividing Operating Expenses into the different primary accounts, which I have been discussing, they may be separated into the items of labor, which makes up about 63 per cent; fuel, about 12 per cent; other materials, about 18 per cent, and miscellaneous, about 7 per cent. Labor is far the largest item, and the methods of reducing Operating Expenses that I have been discussing (namely, getting more service from the existing plant and judicious enlargement and improvement of facilities) must, in order to accomplish the results intended, get more output per unit of labor applied. Without considering wage reduction at all, any successful method of improving railroad operating figures must produce lower labor costs and to do so must rely largely on the effective application of the employees to their various tasks.

The field for individual initiative in the Operating Department is surely very great. Other departments, such as traffic, accounting, legal, and purchasing, also offer like inducements. But I am considering especially the Operating Department because it directs the expenditure of such a large part of the total controllable outgo and because, including as it does the offices of the civil, mechanical and electrical engineers, and also conducting transportation, it is the department which men from technical schools naturally would enter if they choose railroading as a career. No one can say what path leads upward quickest and surest in a railroad organization, nor can he in any other business. The outstanding feature of our American life is the opportunity for achievement that is open to all. The railroad field is no exception. There are five thousand positions on the American railroads paying \$6,000 per year or more; nearly every one of them has possibilities for advancement.

Promotion, of course, must depend mostly upon the individual, but the records indicate that the Operating Department is the best training ground for railroad



executives and that the Engineering Department has been a favorite starting place. Statistics of 35 principal railroads having over 80 per cent of the total mileage of the United States show the following:

	<i>Presidents of Railroads</i>			
	1890	1900	1910	1920
From Operating Department (including Engineering)	20	26	27	26
From Engineering Section (included in figure above)	5	8	5	11

On the basis of mileage, a larger percentage of the railroad property of the United States is in charge of chief executives who formerly were in the Operating Department than these figures indicate.

By its very nature, a large part of the knowledge necessary for successful operation of a railroad must be gained from actual experience in the work. A technical education will serve as an aid, but its possessor cannot avoid the necessity for gaining this knowledge through experience. As labor costs represent the greatest proportion of the total cost of operation, the willing spirit of labor has the maximum of bearing upon the output and the cost thereof; hence an exceedingly important part of the business relates to the successful dealing with employees.

Probably the most important thing in connection with the whole subject of railroad economy is the human relation. The finest cars and locomotives, the latest appliances in shops, the amplest and best maintained tracks and structures, and the cleverest distribution of motive power may lose much of their value

through failure to obtain and keep the good will of the men who maintain the property and operate the trains. There is no panacea to cure the ills of employee relations. Perhaps the one absolute essential is that the official directly in charge of employees shall have faith in them; be loyal to them, and be fair and impartial in all his dealings with them as he is with his company. A feeling of reciprocal friendship and coöperation is worth more than the strongest wage contract ever made. Men do not give their best efforts for mere pay in money, but for the love of accomplishment.

There is no reason to believe that the importance of railroad transportation in this country will diminish. The romance which attached to the conquest of the great plains and mountains is gone, but the far-flung influence and contact with distant communities inherent in the conduct of a large railroad system hold an alluring charm. They may be considered the logical heritage of those who have come after the great pioneer builders and who are witnessing the realization of the dreams those men had of development that was to follow the advent of the railroad. There will always be need of additions and improvements to the railroad system of this country; some new road should be built and refinements and economies in operation must always be sought and applied. The standards of living in this country demand the best railroad service in the world; the remoteness of its centers of population from each other and from its areas of production demand the cheapest. What greater field of endeavor should a young man seek?



TWO MEDICINE LAKE IN GLACIER NATIONAL PARK

*A scenic wonderland made available by the enterprise of the Great Northern Railway*

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# Joseph Lipka: 1883-1924

*A brief account of the all-too-short career of one of Technology's best-known teachers*

Joseph Lipka, Associate Professor of Mathematics, died January 15, 1924, in the middle of the sixteenth

year of his service at the Institute. His loss as a teacher is mourned by the army of students whose thorny way he made easier to travel. His loss as a mathematician is felt by all who knew his work. But a loss greater than either of these, to one who was intimately associated with him for sixteen years, is that of a loyal and sympathetic friend. His work was cheerfully and vigorously done for the glory and honor of the Institute, and will remain as an inspiration for those who are left behind.

Mr. Lipka was born in Briessin, Poland, in 1883, and came to America with the rest of his family when he was about nine years old. He attended the schools of New York City, and was graduated from Columbia University in 1905. While a student, he earned his way by teaching. Knowing so well the experience of foreigners in New York, he took great delight in teaching them. He often had gray-haired men in his classes who were eager to learn the language and ways of the country of their adoption. The profit he got from this experience helped him to become one of the best teachers at the Institute.

As an undergraduate, he was much interested in Mathematics and Mathematical Logic and continued his studies as a graduate student for two years, completing nearly all the requirements for the Doctor's Degree. In the fall of 1907 he went to the University of California as Instructor in Mathematics. While there, he became much interested in Number Theory, although he did not follow it afterwards.

In 1908 he came to the Institute, and as I had preceded him by only four years, we were thrown much together. Our close friendship continued during the rest of his life. At that time, in order to keep ourselves alive, four of us formed a little reading club, which met at my room on alternate Wednesday evenings. Mr. Lipka was a faithful attendant, and as the junior member of the group, I think he derived much benefit from it. We had a good chance really to appraise each other. It was apparent from the first that Mr. Lipka's greatest ability lay in the line of Geometry, so we advised him to get in touch with Professor Kasner of Columbia and finish his work for his degree. This he did, and Kasner's influence was clearly apparent in

By C. L. E. MOORE  
*Professor of Mathematics*



JOSEPH LIPKA

*Marceau*

*Associate Professor of Mathematics who died on January 15, 1924*

all his later work. He got his Ph.D. in 1912, and the next year married Jessamine McIlvaine, of my home town. That summer he and Mrs. Lipka went abroad, and while in Scotland he visited Professor Whittaker's Mathematical Laboratory. There he got his inspiration for starting a laboratory at the Institute. Its great success is an old story. He put the work into book form, and published it in 1918. The value of

this kind of work for scientific and engineering students is shown by the continued great demand for his book. He considered this his most important contribution.

In the winter of 1910, I visited Mr. Lipka at his home in New York, and met his parents and several brothers and sisters. The father and three brothers were in business, and later became quite successful. They all had a decided foreign accent. When Joseph came to the Institute, he also had quite a noticeable accent, but he labored hard to overcome this, and after a few years succeeded.

Mr. Lipka felt this country had done so much for him and his people, that when we became involved in the World War, he was very anxious to do what he could. He went to Plattsburg, and after a short period of training was rejected on account of his physical condition. He was never really well after this time. It was a great sorrow to him not to be able to continue his military service

for the defense of the country he loved so much.

Professor Lipka had a leave of absence in 1921-22, and he and Mrs. Lipka went abroad for study. He spent the first summer at the University of Zurich, and the following winter at the University of Rome, where he came under the influence of Professor Levi-Civita, one of the foremost mathematicians of the world. They became very good friends, and the effect of this is plainly visible in all Professor Lipka's work. While he was in Italy, the University of Padua celebrated the seven hundredth anniversary of its founding. He was sent as a delegate from the Institute, and received the degree of Doctor of the University.

Professor Lipka's death occurred about fifteen months after his return from Europe. During that time he worked unceasingly, and although in poor health accomplished a great amount. What he had already done was small compared with what he confidently expected to do. The Institute has lost one of its most hopeful and promising men.



# The One Hundred and Third Meeting of the Council

*Which was dominated by the Faculty Club, and most successfully, too*

## IV

The Council is growing up. To its credit, it has now a record of two consecutive meetings which in every respect are classifiable as adult gatherings.

Since January 11, when Gerard Swope, '95, came before it, the Council has entered new realms of thought. At the One Hundred and Second Meeting the discussion of Mr. Swope's Finance Plan was shrewd, enlightened, extended and ramified to an extent that made inappropriate any but an official recording. Thus it is that no record of this meeting has yet appeared in *The Review* or will appear until the Plan may be presented in a formal dress.

The One Hundred and Third Meeting was worthy to be paired with its predecessor. Once again, no one flunked the Binet Test. No one could be singled out for the query, "Who is this man that darkeneth Council Meetings by words without knowledge?" It was an evening for pleasure and profit.

The "usual" dinner began at 6:30 (plus the customary time differential) in North Hall, and was notable in that it cost only one dollar, the tenth part of an eagle, doubtless because the tactful Mr. Denison (on whose shoulders is the burden of such arrangements) felt that the twenty-seven members of the Faculty Club, who were present to give the meeting its "joint" quality, owed it to their families not to spend \$1.50 for one meal.

George L. Gilmore, '90, President of the Alumni Association, played no speaking part in this evening. After the salad, Professor Harry W. Tyler, '84, President of the Faculty Club, thrust too soon (he claimed) into the rôle of presiding by a faux pas of the Committee on Arrangements, claimed attention.

"There is going to be dessert," he said reassuringly, "but meanwhile there is another matter to be disposed of. It is my privilege to introduce Mr. Denison, but I shall not paint the lily."

Mr. Denison arose. The Council, mindful of Dr. Tyler's promise that if it would be good, and listen, it might have some lovely chocolate ice cream, and a piece of de-lic-i-ous cake to go with it, sat still and was as good as gold.

Dr. Tyler started the postprandial events at 8:00 o'clock, the Council and Club having meanwhile adjourned to the Faculty Room. His program concerned "Some Modern Methods of College Admissions" and his efforts had brought Dean Herbert E. Hawkes, of Columbia College, President C. C. Little of the University of Maine and President Arthur E. Morgan of Antioch College to Technology as speakers.

Of Dean Hawkes, who related Columbia's happy experience with the Thorndike tests as modes of entrance examination, *The Review's* young man will here say nothing, considering the fact that on pages 249 ff. of this issue, Dean Hawkes says it again, himself, for the benefit of the Alumni at large, in a manner which closely parallels his words to the Council. Saving a slight difference in anecdote (for Dean Hawkes does not repeat his stories) the two are one.

Following Dean Hawkes came President Little—youthful, enthusiastic, witty, and with much grace and charm of speech—to set forth the plan inaugurated at Maine last fall of bringing the freshman class into residence one week before term-beginning so that they might learn to know the University under advantageous circumstances, and, far more important, that the University might come to know them and set some measure for their educability.

President Little believed strongly that the college should by some means get to know the student before the relatively late date of his entrance application, and thought that some means should be devised whereby teachers of schools could send reliable information to a university. This, he admitted to be a difficult undertaking, "but if we make similar efforts over so shallow a thing as

manifestation of athletic ability, why not an equally effective enthusiasm over intellectual ability?" His idea, he admitted, was visionary, and perhaps costly, but—"Maybe it is that I'm young enough to be more of a fool than necessary," he said, and sat down.

Fortissimo applause rewarded him. Seldom has the Council seemed so pleased with anyone as with the youthful president of this northern university.

President Morgan, of Antioch, closed the evening with some remarks upon entrance methods in his institution. Then, Dr. Tyler having declared the floor to be open and the time unlimited, the Club and Council asked questions for the next solid hour. Of particular interest was a miniature debate between Dean Hawkes and President Little on the subject of Ability vs. Attainment.

Finally, by Dr. Tyler, adjournment. He made it solemn.

"We are considering these questions, gentlemen," he said. "I can assure you that in the future it isn't going to be so easy to get into college as you found it." Brr! *The Review's* young man, for one, trudged home thanking Heaven that he had matriculated in the lax, late teens of the century and not in the coming, the impossible, fifties.



*Champlain Studios*

C. C. LITTLE, PH.D.

*President of the University of Maine, who charmed the Council at its 103d meeting*



# TECH MEN IN THE PUBLIC EYE

## WILLIAM C. POTTER, '97

Assaying is the specialty of William C. Potter. At it he excels. It is the one thing than which he does nothing better. If he does not take pride in his attainments in this particular art he is more modest than most men. He weighs accurately and rapidly. He has an uncanny faculty for selecting the fluxes and reagents that will eliminate the dross most effectively and isolate the valuable elements in such form that they can be weighed precisely and evaluated accurately. And yet so far as we know he has never squeezed a buttonette nor weighed a button since he was graduated with the degree of Bachelor of Science in Mining Engineering from M. I. T. in 1897. We doubt whether a single one of the 5,000 men in the organization that Mr. Potter now heads is familiar with even such simple processes as bucking a sample, or feathering a cupel, or running a "slop" copper. Without involving ourselves further in this paradox, we explain: Mr. Potter is an assayer of business proposals and of industrial enterprises. These are his ores; the camouflage, the side issues, the unsound premises are the gangue; and the essential facts on which a decision can be based are the metals that are to be determined. As president of the Guaranty Trust Company of New York, Mr. Potter is responsible for a great many such assays, and big things hinge on the correctness of the analyses.

Another miner-like characteristic of Mr. Potter's is his proneness to dig — to dig deep. Surface indications are not habitually to be ignored, but when a proposition is put up to him he likes to dig to the bottom; if there is any ore he likes to block out the shoots pretty thoroughly before he makes a conclusive report. If he has any failing, according to one of his close associates, it is that he is too conservative. However that may be, we are assured that if William C. Potter expresses a deliberate opinion as to the financial soundness of any undertaking, a large part of financial New York is inclined to feel that further investigation is a waste of effort. That the greater part of his business activities have been devoted to mining is shown in the following outline of Mr. Potter's career. He was born in Chicago on July 16, 1874; he is of English extraction, his paternal ancestors having immigrated to Massa-

chusetts in 1636. A couple of summers spent on his father's ranch in Idaho aroused a desire to live in the West; that is why he studied mining engineering. His first job was as engineer for the Liberty Bell Gold Mining Co., at Telluride, Colo. He spent two years as mining engineer in the Industrial Department of the Santa Fe Railroad. As a member of the firm of Dickman, McKenzie & Potter he managed properties

at Descubridora, Durango, Mexico, and in 1903 he became general manager in Mexico for the Guggenheim Exploration Co. From 1905 to 1911 he served as manager of the Southern Department for the A. S. & R. Co., with headquarters at Aguascalientes. After an interlude of four years as a vice-president of the Guaranty Trust Co., he returned to mining in 1916 as a member of the firm of Guggenheim Brothers. He was president of Kennecott Copper Corporation and vice-president of the Chile Copper Co. Since January 5, 1923, he has been with the Guaranty Company, first as chairman of the board of directors and then as president. During 1918 Mr. Potter, as Chief of the Equipment Division of the Signal Corps of the U. S. Army, did excellent work in organizing this important unit for efficient service.

The theory is often advanced that mining engineering is excellent training for any kind of business career. It is argued that the successful business man should be trained to base

his conclusions on clearly established facts and reach them by accurate reasoning. This is what engineering students are taught to do and what mining engineers must do. Mr. Potter's career seems to support the theory, although we are inclined to believe that, equipped with his natural qualifications, he would have gotten just as far if he had started as a bank clerk instead of going to M. I. T. and following the devious path that began 12,000 feet above sea level at the Liberty Bell mine.

—*Engineering and Mining Journal-Press.*

JOHN W. M. BUNKER, Fac.

A large order of spinach and a side order of potatoes may soon be the cry of those who are anxious to enjoy good health as a result of the announcement by John W. M. Bunker, Assistant Professor of Biochemistry



© Harris & Ewing

WILLIAM C. POTTER, '97

President, Guaranty Trust Company of New York

and Physiology at the Massachusetts Institute of Technology, that the lowly spinach is rich in food value.

No longer, it is believed, will fastidious eaters be satisfied with a wee dab of greens on a small dish, but will relegate King Potato, together with Brother Squash, Cousin Cabbage and little Sister Turnip into the class of side dishes, and call for more spinach.

Spinach, he says, contains vitamins A, B, and a little C. A means vitamins which promote growth, B means vitamins which maintain growth, C means vitamins which protect against scurvy. The different methods of cooking, by boiling water, over steam, and steam under pressure, proved that the C quality of spinach is injured by any of the cooking processes. Thus far the experiments, he says, have failed to show which is the means of cooking to be employed best to retain the nutritive value of the food.

Fed to carefully controlled white rats the effect of spinach was startling. The growth curve on the chart immediately took a sudden and decided upward shoot almost from the first spinach meal. In six weeks the white rat took on practically twice its weight. On the other hand, the rat born at the same time under identical conditions but not fed spinach failed to grow. Experiments were repeated to prove results. Said Professor Bunker:

"The human animal or any other animal cannot grow from babyhood without vitamins A and B—vitamins which promote growth and vitamins which maintain growth. As spinach is cooked in the ordinary household there is a lot of water extra which is thrown away. This contains valuable mineral salts and it contains some vitamins. I know of a case in which three children in one family were each unable to have any butterfat in their milk; that means no cream. They had a personal idiosyncrasy against cream. Thus they got no A vitamins.

"These children were healthy, but they did not gain weight. One of them remained for almost six months at the very same weight. She was otherwise healthy. And in searching about for a substitute for this A, which was missing, I had the mother try making up the modified milk with spinach water. As soon as that was started the weight of this first child started up, just as the weight curve of the white rat started up when we fed it spinach. The same experiment was applied to the other two little girls of the same family later on. It shot up their weight curve.

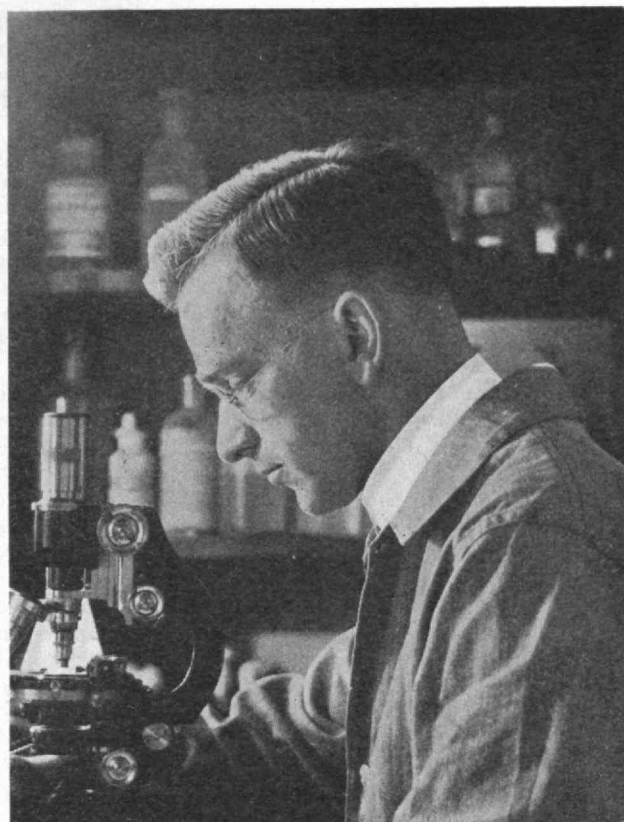
"At present, all three are well above standard weight, but they are still unable to take any butter, although the oldest is seven years of age. It is a concrete example of the value of vitamins in spinach."

Professor Bunker also pointed out that spinach, besides its mineral salts for the growth of a child, is especially rich in iron, a constituent of the blood. There is not enough iron, he said, in milk, so that spinach is a great help to child feeding. It is a bulky food and contains what he termed "roughage." This latter quality makes it a great aid to digestion and helps to war on constipation.

—Springfield (Mass.) News.

#### WALTER R. INGALLS, '86

The scale of living for the American people as a whole is lower than before the war, according to Dr. W. R. Ingalls, New York mining engineer and economist, who has just completed a survey of the economic prospect for 1924 for the American Institute of Mining and Metallurgical Engineers.



JOHN W. M. BUNKER

Assistant Professor of Biochemistry and Physiology, who is here gazing into what we (stimulated by the news in the opposite column) are inclined to call a spinachscope

Dr. Ingalls, a member of the Bureau of Economic Research, thinks that the immediate outlook for business regarding things needed for direct use is good, but that it is not so good for things that the upbuilding of mines, railways, factories, etc., require.

"I still see the economics of this country, as well as of the rest of the world, dominated by the consequences of the war, and I think that it will be many years before we are clear of them," he says. "In the meanwhile, there will be ups and downs in business.

"Underlying everything is the destruction of the war, which brought Austria, Germany and Russia to ruin and impoverished other countries. Not even the United States escaped physical loss.

"Yet in Europe and America alike there developed a mental unbalance in the thoughts of men that in some way the war had produced conditions whereby men could enjoy an improved scale of living without being constrained to work so hard as formerly. There developed other conditions which have put serious obstacles in the way of the international division of labor. These adverse developments may be characterized as the international unbalance.

"In the United States a fundamental consequence of the war was the upsetting of the old economic equilibrium in our domestic system. This produced what I call the primary unbalance; between property and management on the one hand and labor on the other; and the secondary unbalance among classes of labor whereby some of them have benefited greatly while others have suffered acutely. There are tertiary and quaternary unbalances among the divisions and groups of classes of labor.

"The economic discomfort of the farmers is ascribable in part to the international unbalance and in part



to the domestic primary unbalance, the farmers being owners of property who have suffered at the hands of town labor. Similarly is the unhappy position of the white collar classes of labor attributable to the secondary unbalance among workers themselves.

"I do not think that the American people as a whole are enjoying so good a scale of living as pre-war, although some classes have improved their status as a consequence of the unbalancing. A fundamental reason for this opinion is that we are not producing enough, which is ascribable in part to the increased diversion of labor to service, and in part to the slackening in hours and efficiency per hour by those who are working as direct producers.

"Although engineering and management have done something to offset this, it has not been possible for them to develop a complete compensation within so short a time.

"The effects of these fundamental conditions are bound to be slow. We may go through 1924 with the general feeling that all is well, and indeed things may superficially look so. We may even try to make some sort of a forecast from these fundamental conditions.

"In a general way we may expect a continuance in activity in the production of consumers' goods and dullness in those branches that pertain especially to capital goods. There will be upswings and downswings, according as producers misread the signs and overproduce some things with the result of accumulation of stocks, whereof orderly digestion must then be awaited. The setback in business activity in the latter half of 1923 is explainable in that way. In all kinds of production we shall for a long time experience the effects of the excessive provision of producing capacity that happened during the war.

"The desire to make use of surplus capacity will contract margins of profits and will be a constant incentive toward overproduction of some kinds of goods. Labor, with no understanding of real conditions, will behave more and more in strangling ways. Even now we foresee a great strike of bituminous coal miners next April.

"To those who will weigh these words much that seems paradoxical will become clear. Retail traders are doing large business and are optimistic. The manufacturers of many kinds of machinery, on the contrary, find things slow, and in their sentiment range from doubtful to pessimistic. The one has to do with consumers' goods, the other with capital goods.

"Any forecast should, of course, take into account the imminence of German collapse and should allow for surprises elsewhere. American economics are not independent of those of the rest of the world.

"Let anybody draw what deductions from these opinions that he will. My own deduction is that real well-being awaits the removal of a good many economic restrictions, with which we have enmeshed ourselves, and the restoration of the old economic equilibrium."

—*New York Times.*

#### ALBERT L. CLOUGH, '91

In a statement made recently attacking what he terms a harmful method of allowing children to participate in all public movements of the day, Alderman Albert L. Clough (Manchester, N. H.) advocated the inauguration of "Let 'em alone week." He urged that the teachers and pupils alike be given five whole days

when they would be undisturbed in doing their legitimate work and not bothered by visits from solicitors, propagandists or statistic sharks.

—*Boston Herald.*

#### PHILIP L. ALGER, '15

*From an address broadcast by radio from Cincinnati by Prof. Oscar Veblin of Princeton University, President of the American Mathematical Society, during its convention.*

The work of mathematicians [in the war] was by no means all of a theoretical sort. All theory must be based on experiment. And the experiments in this case consisted in getting out and firing the guns in all sorts of conditions. This was done first at Sandy Hook and afterwards at a place in Maryland called Aberdeen. In practice it was a story of mud and mules and occasionally a cannon exploding before the high explosive projectile had left it.

Here we had scientifically trained men engaged on what looked at first like the crudest sort of rough work. But while doing their routine work these men were watching their material and making experiments with a view to improving it. The results in many cases were very valuable. In one case they were extraordinary. For by a very slight modification — cutting off a little copper from the rotating band — the range of the projectile was increased by over a mile and its accuracy made several times as great. This was a work of collaboration in a very real sense, but the main credit should go to a young graduate of the Massachusetts Institute of Technology, Philip L. Alger.

#### GAYLE T. FORBUSH, '92

The home office of the Royal Exchange Assurance in London has announced the appointment of Gayle T. Forbush as United States manager of the company. The move became effective on January 1, and resulted from the resignation of Everard C. Stokes, which was recently accepted.

The new chief representative of the Royal in this country has had an experience in the fire insurance business which dates back to 1892, when, following his graduation from the Massachusetts Institute of Technology, he became special agent for what is now the Great American. Later he acted as general agent for the New England territory until 1905, when he joined the Royal Exchange Assurance as general agent for the same section, with headquarters in Boston. During 1918 he moved to the home office of the company and in 1919 was made assistant United States manager. One year afterward, when Everard C. Stokes became United States manager, Mr. Forbush was promoted to be associate United States manager, and this position he now leaves to take up his new duties. He is a past-president of the New England Insurance Exchange and also of the Insurance Library Association of Boston and has made many friends throughout his long connection with the business of fire insurance.

The Royal Exchange Assurance is now preparing to enter a subsidiary organization, the Car and General of London, in the United States, to write casualty insurance and to help out its own automobile department. The Car and General will probably be licensed in New York and Mr. Forbush will then become its United States manager also.

—*Spectator (N. Y. C.).*



# WITH THE UNDERGRADUATES



*Craftsman*

## AMBISEXTROUS

*This is a photograph of C. H. Topping, '26, in whose name the "C" stands for Charles*

## TECH SHOW ON TOUR

Following the successfully established precedent of the year 1923, Tech Show 1924, titled "The Hidden Idol," authored by W. T. Cook, '24, coached by Ralph L. Harlowe, Charles A. Young and Miss Virginia Tanner will set out on March 15 for a tour that will take it to Northampton, Hartford and New York. Contrary to precedent, however, the performance at Northampton will this year come first of all instead of last of all. Matinée and evening performances will be given here and

with allowance of two days for conquering of geography the Show will play in Hartford on the evening of March 17. From there the cast, chorus, ballet, orchestra and scenery will travel rapidly and together to New York and give a performance in the ballroom of the Hotel Astor on the afternoon of March 18. There will be an evening performance on the same day to be followed by dancing until 2:00 a.m.

This evening performance concludes the first series. The second series opens in Boston over one month later and coincides with Junior week. The Boston performances are all to be held at the Shubert Opera House: on the evening of April 21 for the public, on the evening of April 22 for students and on the evening of the twenty-third for alumni.

Cook, who is a resident of Norwich, Conn., and a senior student in Course VI, has written a libretto which places a professor, his charming daughter, her handsome affianced, a general, a prince and a number of interesting natives in the principality of Kookoostan. Here they proceed to involve themselves in sufficient complication to permit three acts and fifteen or twenty songs. Everything turns out all right at the end.

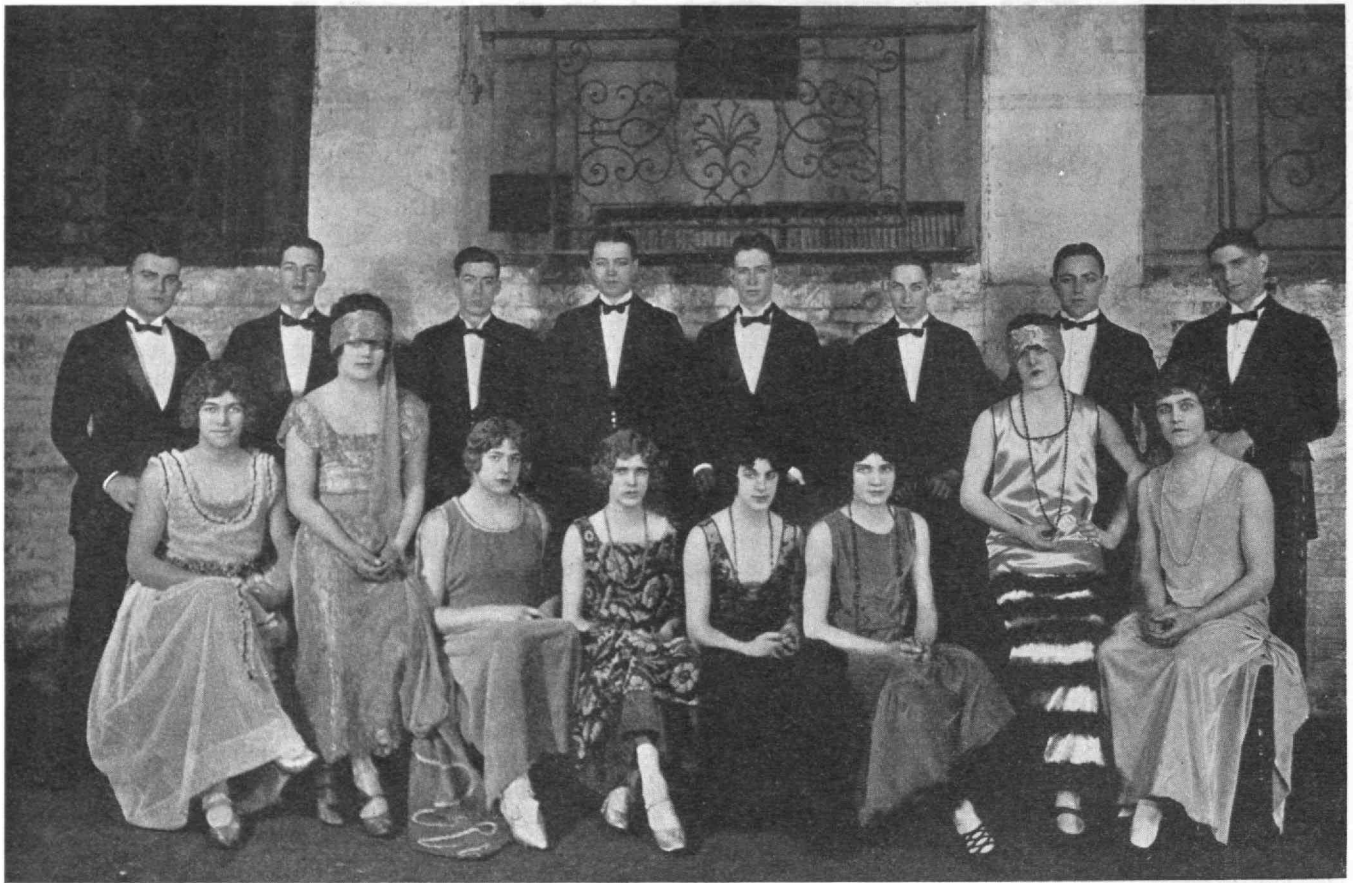
There are ten principals in the cast, the roster of which reveals the names of four or five veterans of former shows. The chorus numbers sixteen. Sixteen men likewise go through the paces of Miss Tanner's ballet, set this year in Tibet.

As usual, the important adjunctives of music, lyrics and scenery are the work of undergraduates. The scenic designs done by members of the Department of Architecture have received this year unusual commendation. An Indian camp, the interior of a Maharajah's palace and of a temple for the worshipful



*Craftsman*

FROM THE HIDDEN IDOL  
The assembly of Miss Tanner's Tibetan Ballet



Craftsman

#### THE BEAUTY AND CHIVALRY OF THE SHOW CHORUS

*Note particularly the beauty. Was ever a girl more plausibly lovely (if slightly hard-boiled) than the second from the right?*

natives all lend admirable inspiration for the exotically directed efforts of the designers.

Edgar P. Dunlaevy, '24, is this year General Manager of the Show. He reports that dress rehearsal is scheduled to take place some time within the first ten days of March. With its creases firmly ironed out in this vigorous undertaking, the Show will troop for Broadway.

#### STOVER AT TECHNOLOGY

The forward march of Applied Science can no way be better illustrated than by consideration of progress made between the days in which Owen Johnson wrote "The Varmint" and the present time. In 1910, or thereabouts, John Humperdink Stover put into operation the first crude device for closing a bedroom window in the morning without forcing anyone to the necessity of arising to move through the frigid air from bed to window. It was a crude device, was Stover's, activated by no more robust a prime mover than an alarm clock, the force of whose spring tipped a weight from the shelf and brought the window down with a crash at some appointed time.

Apparently, it has remained for A. H. Brown, Jr., '26, a student of Course II, resident in the dormitories, to carry the development of such a mechanism to its last degree of perfection. The Brown patent still utilizes the alarmless alarm clock, but its function is now purely the auxiliary one of closing an electric circuit at the desired time. Once the circuit is closed a businesslike motor gets into action and closes the

window by activating a complicated gear-train. As the motor drives the window home, the window returns the compliment by striking a trip at the ultimate point of its downward path which breaks the circuit and quiets the struggling motor. The occupant of the room rises in comfort at any later time which may please him.

Said a reporter from *The Tech* of Mr. Brown, "He declined to state whether or not the device is to be put on the market." If the inventor would decide later on to make a possible venture of his device, he would do well to remember the existence of such extortionate concerns as the Eureka Alarm Clock Company and should be sure that in his well-laid plans there is no Doc Macnooder.

#### SCABBARD AND BLADE

The Military Science Department has announced the installation of a chapter of the national honorary military fraternity, Scabbard and Blade, here at Technology. Following the recognition of the petition to secure permission to have the chapter installed, the ceremony took place some days ago under the direction of A. S. Burket, Lieutenant Colonel in Scabbard and Blade from Ohio.

#### ANOTHER VOO DOO BANQUET

One more was added to the succession of Voo Doo banquets on January 29. As usual, the dinner was held at the Hotel Lenox and was enlivened by the customary professional entertainers—to say nothing of Mr. Winward Prescott of the Department of English. About fifty men were present.

# ATHLETICS

## THE I. C. A. A. A. A.

The proposal to eliminate the hammer throw or discus throw, or both events, from the outdoor championship track and field program of the Intercollegiate Association of Amateur Athletes of America, was rejected at the January meeting of the Advisory Committee and Executive Committee held at the Columbia Club in New York City. Gustavus T. Kirby, Chairman of the Advisory Committee announced after the meeting that while the plan to curtail the field events had been rejected, his board would suggest to the Executive Committee at its March meeting, that a relay race of a distance of two and one-quarter miles, be added to the track program, to balance more evenly the schedule of the outdoor I. C. A. A. A. A. meet. This suggestion, he said, would be submitted without recommendation by the Advisory Committee.

The success of the University of California teams in winning the title two years in succession mainly through their strength in the field events, has been alleged as the cause of much of the support behind this plan to revise the program. It was explained at the meeting that the change was desired in order to preclude the possibility of a preponderance of field competition and was not aimed at any particular contestant. Many officials of the I. C. A. A. A. A., regard the discus throw as impracticable and the hammer throw as dangerous. The addition of the javelin throw, several years ago, gave an added event to the field events and the proposal to equalize matters last year by adding a relay race was defeated by a very slim margin.

The relay race, which will be suggested to the Executive Committee by the Advisory Committee, has attracted opposition from representatives of several colleges on the ground that there will be no room on the track for such an event. This opposition, however, is expected to be overcome by the order of running the relay race which will be recommended. This order will be one mile, one-half mile, one-quarter mile, one-half mile. Under this arrangement, with the mile leg being conducted first, it is expected that the danger of crowding on the track will be minimized or eliminated entirely, regardless of the number of entries.

Although the major part of the discussion was about decreasing the number of the field events, considerable attention was paid to plans for a saving of time in future meets, through adoption of regulations calculated to speed up the competition and at the same time eliminate the waste of time which is invariably associated with the conduct of the outdoor meet. The first day of the last outdoor competition dragged along until after eight o'clock.

The report of the Executive Committee disclosed that the past year has witnessed the establishment of two policies which are regarded as noteworthy in the history of the Association. One of the events was the action of Mr. Kirby in providing permanent headquarters for the I. C. A. A. A. A. at 57 East 56th Street, New York City, marking the first time such accommodations have been available.

Coincident with the establishment of this central office, the Executive Committee created the salaried position of Assistant to the President, thus providing an official who shall be available at all times, not only to have charge of the central office but to establish and maintain suitable records and publications of the Association and to assist the various officers. This position is now held by James A. Taylor of Columbia.

## THE FIRING LINE

In competition with more than fifty of the best rifle shots in the east, representing eleven colleges, Technology took third place, at a shoulder-to-shoulder match shot at the 71st Regiment Armory in New York City on January 19. The classification of Rifle Shooting as a major sport in many colleges and its increasing importance among the minor sports in other institutions is shown by this meet, in which the teams traveled to a single range for the tournament. Most collegiate rifle matches are held on the ranges of the respective contestants, the results being compared by telegraph. This practice allows a wide field for the schedule makers and permits intersectional contests without danger of invoking charges of barnstorming.

When compared with Technology's standing of seventeenth in the national intercollegiates last year, the above showing is cause for great satisfaction especially when one considers that the team has yet

to be defeated in a dual match this season. George Washington University lead with a score of 1867 out of a possible 2000; Columbia was second with 1823. The Institute lead Yale by four points, capturing third with a score of 1809. The others finished in this order: fifth, College of the City of New York, 1785; sixth, Johns Hopkins University, 1754; seventh, Norwich University, 1733; eighth, Georgetown University, 1724; ninth, Boston University, 1646; tenth, Princeton University, 1603; eleventh, New York University, 1488.

The afternoon's matches found the Institute representatives leading the field with five more teams to shoot; it was not until the evening performances that George Washington and Columbia passed them. The shooting of Walter Stokes, former international small-bore title holder, who piled up the highest individual score of the meet, was the feature of George Washington's victory.

**THE CALENDAR OF FUTURE SPORTS**  
**March 1—Basket Ball, University of Maine at Orono.**  
**March 1—Gym, Yale at New Haven.**  
**March 1—Track, I.C.A.A.A. Indoor Meet at 22nd Regiment Armory, New York.**  
**March 4—Swimming, Brown at Providence.**  
**March 8—Swimming, Dartmouth at Boston.**  
**March 8—Wrestling, Lehigh at Cambridge.**  
**March 14-15—Swimming, N.E.I.S.A. at Hanover.**  
**March 14-15—Wrestling, Intercollegiates at Providence.**  
**March 15—Fencing, U.S.M.A. at West Point.**  
**March 22—Fencing, Harvard at Cambridge.**  
**March 22—Gym, Princeton at Cambridge.**  
**March 28—Fencing, Yale at Cambridge.**



E. D. Murphy, '25, ex-Captain of the Tech team, started the list for the Cardinal and Gray with a perfect score in the prone shooting while J. H. Fielding, '25, shooting fifth, turned in another perfect score. Captain D. M. Creveling, '24, J. E. Jackson, '24, and E. M. Holmes, '25, accomplished a set of 99's. The possibles by Murphy and Fielding were two of the eight possibles shot by all the teams entered. George Washington men made four of the eight. Captain Creveling and Fielding were tied for individual honors with 373 points each for the four events, and Fielding's record of 92 in the standing stage was the highest credited to any of the entries.

The season opened with two matches prior to the Christmas holidays against the University of Maine and Boston University. Technology won the first with a perfect score of 500, Maine making 487. This was on December 8. Five days later Boston University succumbed by a single point, 496 to 495. Harvard was defeated on January 12 by a score of 499 to 490. Following the intercollegiate shoot in New York, three dual matches have been shot with Technology a winner each time: January 26, University of Michigan, 1864 to 1831; February 2, Iowa State University, 943 to 920; and February 9, McGill University 997 to 956.

The formation of the Northeastern Intercollegiate Rifle League with Technology as a member was announced on February 7. This newly formed organization will operate under the auspices of the Intercollegiate Rifle Association, which in turn is a subsidiary of the National Rifle Association. Only ten members have been admitted at the present time, but there are so many applications that it may be necessary to form an additional league for them next year.

The institutions comprising the new League are Columbia, Dartmouth, Harvard, Norwich, Pennsylvania, Princeton, Yale, Syracuse, Pennsylvania State College, and Technology. The League schedule will last from February 15 to March 18, during which time each institution will participate in nine matches, meeting each of the other members once. The matches will be run off at the rate of two a week, and the final standing will be decided upon a percentage basis of matches won and lost. In the event of a tie, the teams in first place will fire a shoot-off for the championship.

Matches will all be carried off by telegraph, and the National Rifle Association in Washington will act as official scorer. The reports of the matches must reach Washington by noon of the day following their occurrence and a failure to comply with this provision will operate as a forfeiture. The N. R. A. rules as to positions, guns, sights, ammunition, and the targets will be furnished by them. Each team is to consist of five men to shoot in the four positions — prone, kneeling, sitting and standing. Ten shots are to be fired in each position for a total possible individual score of 400 points and a possible team score of 2000 points. The range is to be fifty feet and 22-calibre rifles will be the standard. Telescopic sights are permissible and it is expected that they will be used by all competing teams.

The eligibility rules of the various colleges will govern the participation of their respective marksmen, no general rule other than this having been prescribed by the League. No substitutions may be made during the time that a match is in progress, but may be provided for at any other time.

## ATHLETIC RESULTS UP TO FEBRUARY 15

### BASKET BALL

Jan. 17—Tufts 38, M. I. T. 18, at Medford.  
 Jan. 19—R. I. State 34, M. I. T. 26, at Cambridge.  
 Jan. 23—Brown 29, M. I. T. 27, at Providence.  
 Jan. 26—Mass. Ag. Coll. 20, M. I. T. 14, at Cambridge.  
 Feb. 1—Stevens Inst. Tech. 22, M. I. T. 21, at Cambridge.  
 Feb. 8—Brooklyn Poly. Inst. 19, M. I. T. 13, at Brooklyn.  
 Feb. 9—C. C. N. Y. 33, M. I. T. 20, at New York.

### BOXING

Jan. 28—Toronto 5, M. I. T. 1, at Cambridge.  
 Feb. 2—Colgate 4, M. I. T. 3, at Cambridge.  
 Feb. 9—U. S. N. A. 5, M. I. T. 1, at Annapolis.

### HOCKEY

Feb. 2—U. S. M. A. 2, M. I. T. 0, at West Point.  
 Feb. 9—Dartmouth 12, M. I. T. 1, at Hanover.

### RIFLE SHOOTING

Jan. 19—Geo. Washington Univ. 1867, Columbia 1823, M. I. T. 1809, Yale 1805, C. C. N. Y. 1785, Johns Hopkins 1754, Norwich 1733, Georgetown 1724, Boston Univ. 1646, Princeton 1603, New York Univ. 1488, at New York.

Jan. 26—M. I. T. 1864, Michigan 1831.  
 Feb. 2—M. I. T. 943, Iowa State Univ. 920.  
 Feb. 9—M. I. T. 997, McGill Univ. 956.

### SWIMMING

Jan. 19—M. I. T. 50, Lowell Textile School 12, at Lowell.  
 Feb. 2—Amherst 38, M. I. T. 33, at Amherst.  
 Feb. 8—Wesleyan 59, M. I. T. 12, at Middletown.

### TRACK

Jan. 19—Dual Relay, Harvard 8, M. I. T. 1, at Soldiers' Field.  
 Jan. 26—K. of C. Games, 1-mile Relay won by Brown, at Mechanics Bldg.  
 Jan. 30—Millrose Games,  $\frac{3}{4}$ -mile Relay won by Princeton, at Madison Square Garden.  
 Feb. 2—B. A. A. Games, 1-mile Relay won by Harvard; 2-mile Relay won by Dartmouth, Syracuse second, M. I. T. third, at the Arena.

### WRESTLING

Jan. 19—Yale 26, M. I. T. 3, at New Haven.  
 Feb. 9—U. S. N. A. 22, M. I. T. 3, at Annapolis.

# NEWS FROM THE ALUMNI CLUBS

## TECHNOLOGY CLUB OF RHODE ISLAND

The holiday season proved a busy one for the Technology Club of Rhode Island for the big social event of the year occurred at that time. For the first time in Wells' Outline of History, the Combined Musical Clubs included Providence in its itinerary and the town turned out well to voice its approval by the clap-clap method. Although Providence was the final effort on the Clubs' trip, the boys showed plenty of pep and enthusiasm, despite the fact that they were handed their first term reports just before the concert. The reports must have been very favorable for everyone carried a smile and old man gloom was among the missing. We hope, however, that none of the artists were forced to appear gay with a *Votus Tenus* in their hip pockets. This laughing with a broken heart business is all right for proverbial clowns, but no candidate for the Musical Clubs ever expected to practice it.

The concert was excellent. The daily paper said so and the Secretary told the reporter so. Q. E. D. Seriously, though, the audience did approve most heartily and accorded the Clubs an enthusiastic reception. Several of the worthy matrons present appeared a bit astonished when the Dippy Davy Duo began their work, but the ice soon broke and many enamel faces cracked. Much favorable comment has been heard since the concert for by special arrangement with Station WJAR the entire program as well as the dance which followed was broadcast and Technology gained considerable advertising thereby.

The concert was held in the Churchill House which has one of the finest dance floors in the city, so when the time came for the musical wrestle the assembled multitude was able to perform intricate pedal maneuvers the like of which is seldom seen. The Club members responded most generously and all the boys who cared to spend the night in "The Gateway to Southern New England" were well taken care of. The proceeds of the affair formed the nucleus of a scholarship fund which the club hopes to augment by giving a series of dances. Fortunately, there were proceeds so the embryo student will not have to start life with a deficit.

On January 18 the Club held its annual bowling tournament at the To Kalon Club, Pawtucket. This proves to be one of the most enjoyable meetings of the year and a large number turn out for the battle. Jim Finnie was ye genial host on this occasion and outside of his fixing of the pin boys, he proved quite acceptable. Four teams struggled with the theory of strikes and the equation of the square. Some solved them, others exercised the gutters, but all gained much enjoyment therefrom. Only one casualty was recorded after the smoke had cleared. Hovey Freeman required nine stitches to close a gaping wound caused by a too strenuous indulgence in the game. He was reported quite well the following day though suffering slightly from exposure . . . and embarrassment. The score board in centerfield showed that a Mr. Finnie of Pawtucket had 362 for two strings which, although not very good, was high enough to capture the first prize which, if remembered correctly, was three cheers. John Crandon Nash of Saylesville, R. I., formerly of Cherryfield, Maine, received second prize, or two cheers, with a record of 275.

George A. Midwood, Jr., Edward P. Clark, '21, and Rodney G. Pettengill, '22, were elected to membership at the meeting.

Norris G. Abbott, Jr., '20, *Secretary*,  
107 Providence Street, Providence, R. I.

## TECHNOLOGY CLUB OF HARTFORD

To make a change in our bi-weekly luncheons we invited the Cornell Club of Hartford to join us on December 13, 1923. Twenty-four Tech men and twenty-one Cornell men attended, the object being to make new acquaintances and to strengthen both organizations in Hartford.

President Fred C. Moore made the address of welcome and President Bryant H. Blood of the Cornell Club responded. Our guest for the luncheon was Hiram Percy Maxim who gave us a most interesting talk on "Some big opportunities." Some of the opportunities he offered us were certainly as big and wonderful as the radio would have been to him the year he graduated from Tech in 1886.

The joint meeting proved a great success and it was voted to have another during the winter.

George W. Baker, '92, *Secretary*,  
Box 893, Hartford, Conn.

## TECHNOLOGY CLUB OF BUFFALO

On the evening of January 10, the Technology Club of Buffalo gave a dinner at the University Club in honor of Dr. Stratton. The new President was given a rousing reception by the ninety men who were present. This was the largest gathering of Tech men ever present at a meeting in Buffalo.

The following men were present as guests of the club: Mr. Whitehead, Assistant General Manager of the Lackawanna plant of the Bethlehem Steel Co., Mr. W. E. Corry, President of the Niagara Lockport & Ontario Power Co., Mr. Thompson of the Corrugated Bar Co., and Father P. F. Cusick, President of Canisus College.

Whitworth Ferguson, '22, led the singing and the hearty response of many lusty voices showed an abundance of school spirit.

Solon J. Stone, '01, President of the Technology Club of Buffalo, acted as toastmaster and started the speech making by calling on N. Loring Danforth, '01, to welcome Dr. Stratton. Danforth rose to the occasion and after the formal welcome, he gave a brief history of the activities of Tech men in Buffalo affairs.

Mr. Whitehead, representing the Bethlehem Steel Co., was next called on and he paid a fine tribute to the work done at the Lackawanna plant by the X-Amen under the direction of Dustin Wilson, '17, and William P. Ryan, '18.

Dr. Haslam, Head of the school of Chemical Engineering Practice, next spoke and gave some very interesting information on recent developments at the Institute. He was followed by Dustin Wilson and Bill Ryan.

President Stratton was next called as the speaker of the evening and was greeted with a real old "M. I. T." He told a very absorbing story of the current affairs at the Institute. His plans were so much broader than the older men had ever hoped for that they could hardly believe that such changes were taking place. Dr. Stratton's personality, coupled with the ideas he expressed for broadening the students, left the alumni with the conviction that at last the right man had been found.

O. B. Denison, '11, gave a short talk on the doings and plans of the Alumni Association and the meeting was brought to a close by showing motion pictures of the recent commencement and familiar scenes around the Institute.

Much credit is due Marvin Gorham, '93, as Chairman of the Committee on Arrangements for the success of the dinner. Dr. Watkins, '95, acted as Chairman of the Committee on Guests.

Thomas R. Weymouth, '97, President of the Iriquois Gas Co., met Dr. Stratton on his arrival in Buffalo and took him as his guest to the Buffalo Athletic Club, where he made his headquarters during the stay in Buffalo.

President Stratton spent the 10th in Buffalo and the 11th in Niagara Falls visiting with the alumni and making studies of some of the large industries located in this part of the state.

Denison spent the 11th and 12th in Niagara Falls and the 14th and 15th in Buffalo. He stirred up a great deal of new interest among the alumni and helped to lay the plans for a very active year for the Technology Club of Buffalo. The Friday luncheons at the Chamber of Commerce have been very well attended and through these meetings many new men have been able to get acquainted with the Buffalo crowd.

W. R. Barker, '21, *Secretary*,  
485 Ashland Ave., Buffalo, N. Y.

## THE CINCINNATI M. I. T. CLUB

The annual meeting of the Cincinnati M. I. T. Club was held on January 26, with thirty-eight members present.

Dinner was served at the Kemper Lane Restaurant after which the following officers were elected: Howard Luther, '08, President; Kenneth Wright, '19, Vice-President; Fred W. Morrill, '07, Secretary; Oliver L. Bardes, '21, Treasurer; John Nolan, Jr., '04, Albert Mathews, '92, Nathan Ransohoff, '10, Executive Committee.

The question of a local scholarship was discussed and its establishment seemed to have the unanimous approval of those present. It was voted that a committee be appointed to institute a plan for the financing and awarding of such a scholarship.

After the completion of the business of the meeting the club adjourned to the Rex Alleys which had been reserved for the evening.

Fred W. Morrill, '07, *Secretary*,  
5713 Valley View Avenue, Cincinnati, Ohio.

### TECHNOLOGY CLUB OF CHICAGO

The most important thing in the atmosphere outside of Polar weather which we are enjoying is the 1924 Club Directory. Apologizing to the shade of Mark Twain, it might be mentioned that in spite of a great deal of talk and publicity nothing is being done about the weather. The Directory on the other hand is quietly progressing towards a successful completion. Very little is being said to the members who have returned their data cards and subscribed for advertising and the whole work is about half completed. There remains to be done fifty per cent, which consists of wresting from ten per cent of the membership the data pertaining to themselves, which are urgently needed to make the directory an unqualified work of satisfactory completeness.

The first luncheon of the new year was devoted to consideration of the points brought out in the talk of Mr. Denison at the dinner on Thursday, December 20, 1923. They were as follows: (1) Annual Directory of members; (2) Encouragement of members to send criticisms to the Executive Secretary of (a) Alumni Affairs (b) Curriculum Changes (c) Methods of attracting new men; (3) Hospitality Committee; (4) Keeping in touch with present students; (5) Interesting prospective students.

In the absence of an official stenographic report the Secretary's memory seems to recall that Mr. E. Russell Baldrige, '21, XV<sub>2</sub>, who by the way sports a perfect attendance record which would win him at least a gold star in Sunday School, was appointed to act as the Hospitality Committee with several trusty lieutenants. Baldy's job is to welcome new graduates and former students to the commercial capital of the United States, sell them some securities and acquaint them with our luncheons. (The genuineness of his friendship is so unassailable that this little reference to alleged commercialism I hope will be pardoned.)

Mr. Leathers writes that he has withdrawn from active business and is making his home in Florida.

Mr. C. Wesley Manville, '22, has moved to Chicago from Boston to join forces with the Standard Oil of Indiana.

As a parting paragraph, let it be impressed upon the worthy brethren of Chicago that our Tuesday luncheons are worthwhile. We now have a private dining room at the Engineers' Club. The sky is the limit and the roof is on solid. The service and meals are excellent, even better than usual. No effort is being spared to make the Tuesday luncheons the best and most agreeable meeting place in Chicago for Tech men. Some of the boys ride ten miles each week to the luncheons and others do not walk a block to attend. We need the coöperation of every graduate or former student in Chicago. The benefits are reciprocal. Are you fair to yourself and your friends?

As Schell says, "Keep your friendships in repair." That should be the motto of the club.

H. B. McIntyre, '22, *Secretary*,  
600 W. Jackson Blvd., Chicago, Ill.

### TECHNOLOGY CLUB OF CENTRAL PENNSYLVANIA

In order to meet Mr. Orville B. Denison, and to bring back to life an association which had been inactive for several years, a dinner was held here at the Engineers' Club on January 19. Farley Gannet, '02, who had charge of all arrangements, deserves great credit for the success of the meeting which twenty-one alumni attended, many of whom lived some distance from Harrisburg.

After a very good dinner, which was enlivened between courses by Tech songs and also by the personal repertoire of Mr. Denison, a very complete but brief account was given by the Executive Secretary of the doings of Tech of today and also of the plans for the future. In addition, he outlined the aims of the Alumni Association and told how they applied to the branches of it in various districts. In order to show the modern Technology to the graduates who have only the buildings in greater Boston to remember, Mr. Denison had a reel of moving pictures of scenes at the Institute.

After resolving to return to activity once more and reflecting Fraley Gannet, in spite of his modest protestations to the Presidency, the meeting adjourned. J. R. Elliott, Jr., '23, was elected to the office of Secretary-Treasurer.

J. R. Elliott, Jr., '23, *Secretary*,  
1901 Bellevue Road, Harrisburg, Pa.

### NEW HAVEN COUNTY TECHNOLOGY CLUB

Several of our members attended the recent alumni gathering at the 'Stute and brought back reports of a very fine meeting.

We have held two luncheons during the month and an average of fifteen men turned out. These luncheons are held at the Hotel Bishop, New Haven, and are full of interest. Last winter some very fine speakers were obtained, and short talks were given on a variety of subjects. This year we have had no

speakers but usually some matter of importance is brought up for discussion. Just now it is a dance.

Some of the heavily married members have been unable to sneak out to our evening meetings, so an informal dance and card party is to be held on January 31 for the ladies. The party is to be held at the New Haven Lawn Club and it is hoped that every member will attend. No excuses about not being able to get out on account of leaving the wife alone will be accepted.

Herbert R. Polleys, '18, *Secretary*,  
1523 Chapel Street, New Haven, Conn.

### THE TECHNOLOGY CLUB OF NEW YORK

The annual dinner of the Technology Club of New York will be held on Friday evening, March 7, 1924, in the Grand Ballroom of the Waldorf-Astoria. The feature of the dinner will be the broadcasting of speeches and entertainment to all stations in the country and to stations in London and Honolulu as well. Technology men will have the honor of witnessing this feature, one which has never before been attempted. All Tech men are cordially invited to attend. For detailed information regarding the annual dinner, your attention is called to an article in another part of this issue of *The Review*. Reservations to the dinner should be mailed to W. C. Swain, Treasurer, care of Tech Club, New York City.

As previously noted, Monday nights have been reserved for lectures, and the Entertainment Committee has supplied us with some very able and entertaining speakers, the most recent of which have been Mr. Lee Simonson, Scenic Director of the Theater Guild, and Professor F. Wheeler Loomis of the Department of Physics, New York University.

Mr. Simonson, who has put on "Liliom," "R. U. R.," "Back to Methuselah," and many equally celebrated plays, spoke on the problems of the modern stage, with special reference to its development in relation to lighting, color and stage mechanism. Professor Loomis spoke on, "Recent Discoveries about the Structure of the Atom, and the Nature of Light." He brought out startling facts which dealt with the advances in the knowledge of physical laws during the last five years.

The club's new dining service is a great success and is being well patronized. Classes, fraternities and other organizations are making regular and continued use of the excellent meals served, and each week the management is receiving an increased number of such reservations. At the present writing the Class of 1912 is livening up the Stein Room with the Stein Song. Tech men visiting in New York City are cordially invited to visit the club rooms and avail themselves of the dining service.

On January 16 the annual bridge tournament was started, and will continue on each Wednesday evening for a period of six weeks.

Robert J. Marlow, '17, *Secretary*,  
17 Gramercy Park, New York, N. Y.

### DETROIT TECHNOLOGY ASSOCIATION

The usual luncheons and monthly dinner were held during the past thirty days including a dinner and bowling at the Aviation Town and Country Club. Besides Tech has a regular bowling team which took a game from Purdue the other night in the Intercollegiate Bowling league. Graber, Hine, Dennett, French, Buck and Baker comprised the team. When we can get George Pottle and Charles Tuller with their dead dick eyes out, let them all beware.

The greatest thing around Detroit men is the announcement that the annual spring meeting of the Technology Clubs Associated will be held in Detroit on May 19, 20 and 21. Already a large and extensive program has been outlined. The main difficulty seems to be to cut down all the interesting things to see and do within the short three days. Detroit is the city for engineers, for in most of its branches the last word in engineering is found.

Seeing the industrial Detroit will take up only a portion of the program, for when Tech men get together it's always fair weather. There is a little trip planned that in itself will pay every Tech man to attend.

There is still another phase of the meeting planned which will interest many of the men, for it will be the bringing of Boston to Detroit—a chance to get the effect of being on Boylston Street and walking in the corridors of Walker Memorial; a veritable case of Allah going to the mountain.

Philip C. Baker, '16, *Secretary*,  
768 Penobscot Bldg., 1168 Edison Avenue, Detroit, Mich.



# A Life of Francis Amasa Walker

## Third President of the Massachusetts Institute of Technology

By James Phinney Munroe



GENERAL WALKER was eminent as a soldier, a statistician, an economist, an administrator, an educator, and, above all, as a man.

He was born in 1840, graduated at Amherst in 1860, fought through the Civil War and was breveted Brigadier General at twenty-five; was Superintendent of the Census at twenty-nine, Commissioner of Indian Affairs at thirty, Professor in Yale at thirty-one, President of the Massachusetts Institute of Technology at forty-one, and died at fifty-seven.

### The Opinion of the Press

*Boston Transcript:* "The first thing which strikes the reader of this biography is the many sidedness not only in character but in achievement of its subject . . . Yet after all it is as the 'Preserver' of Technology that he will be given his most lasting fame, although Walker the president and administrator does not dim Walker the man. President Hadley of Yale once said that General Walker knew more things worth knowing than any man of his acquaintance . . . Mr Munroe is eminently fitted for his task as biographer."

*Chicago Evening Post:* "Mr. Munroe's life reads like a novel and is much more entertaining than the average book of fiction. It brings honour where honour is due, and should therefore itself receive the same award."

*N. Y. Evening Post:* "This biography places before us a vivid and varied picture of a man who combined passionate energy with calm, common sense, intense earnestness with delightful humour, aggressive independence

of thought with sincere respect for the heritage of the past, unflagging zeal for the public good with a total absence of priggishness or cant, intellectual ardor with splendid gallantry as a soldier, and a keen interest always in whatever makes for physical and excellence."

*The Nation:* "Mr. Munroe's volume is distinguished by its fine balance in the presentation of the character and achievements of a many-sided being. To him, Walker has never ceased to be a living influence, and it is Walker the man who stands forth in these pages."

*N. Y. Herald:* "Mr. Munroe is well qualified for the great task of this biography, as he was secretary of the faculty during a large part of Walker's administration of the Institute and has had access to all available data. Besides that, he is a master of a clear, simple and vigorous style, which makes the narrative highly readable. He has also shown excellent judgment in the selection and arrangement of his material."

The volume contains 437 octavo pages of text, exclusive of the index and seven half-tone illustrations. The price is \$4.00.

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# NEWS FROM THE CLASSES

*News from even-numbered classes is published in issues dated November, January, March and May. News from odd-numbered classes is published in issues dated December, February, April and July. The only exceptions to this rule are those classes whose Secretaries have guaranteed the appearance of notes in every issue. These classes are: 1896, 1900, 1901, 1902, 1905, 1907, 1910, 1911, 1912, 1914, 1915, 1916, 1917, 1918, 1920, 1921, 1922 and 1923. Other classes adhere to the alternate schedule. Due to strict limitation of space, The Review is unable to publish lists of address changes of members of the Association. The Alumni Office in Room 3-209, M. I. T., will supply a requested address or will act as the forwarding agent for any letters addressed to members of the Association in its care.*

1868

ROBERT H. RICHARDS, *Secretary*, Carter Hall, Warrenton, Va.

In April, Bob Richards and Joe Revere paid a visit to Eben Stevens. They found him well and delighted to welcome them. This is the time when Joe conceived the idea of sending a pig to Eben. They had lots of fun over the idea of what a lot of good it would do Eben to have the care of a pig.

At the banquet on January 5, the Class of '68 had its Fifty-fifth Anniversary, but out of the nine members living there were only two present, Richards and Revere. But they made up for the lack of the others by the jolly good time they had. One feature was the drawing of a caricature of Bob Richards by Collier the artist of the *Boston Herald*. The likeness was sublime. He was only one of many victims.

Richards finds he misses his old teaching in the Mining Department very much. It was a real pleasure to him and he hopes it was to his boys. He is trying to make up for it by what he can do for Mrs. Richards' nephew, Robert E. Jameson, eleven years old, known as Jim.

1874

CHARLES FRENCH READ, *Secretary*, Old State House, Boston, Mass.

An enjoyable class lunch was held at the City Club on December 4, 1923, partaken by Barrus, Brown, Chase, Elliot (G. B.), Mansfield, Nickerson, Read and Russ. Plans for the celebration of the Fiftieth Anniversary of graduation, which occurs next June, were informally discussed. Mr. Brown extended an invitation to the members of '74 and their families to spend a day at his country home in Hingham. The invitation was accepted, and the outing thus proposed will probably be made one of the leading features of the celebration. Those who took part in a similar event several years ago recall it with much pleasure, and will be glad to join in another. Mr. Nickerson announced a month's rest and pleasure trip to the West Indies, which he proposed to enjoy in January and February; and Russ stated that he would soon be sending us post-cards from Key West.

There was a good representation of '74 men at the annual Alumni Dinner on January 5, consisting of Barrus, Chase, Elliot (G. T.), Nickerson, Read, and Russ.

Holbrook writes from Berkeley, California, under date of December 7: "Notice of lunch came twenty-four hours in advance of meeting. As I have no means of crossing the continent in twenty-four hours, did not attempt it. Wish I might go on next spring, but fear I will have to postpone it for a year, and I may go West before that. A bunch of us went to Carmel three weeks ago to see Dean Burton and had an enjoyable time. There are about fifteen to twenty that have lunch in San Francisco every month."

1876

JOHN R. FREEMAN, *Secretary*, Room 815, Grosvenor Bldg., Providence, R. I.

No notes received from the Secretary.

1882

WALTER B. SNOW, *Secretary*, 115 Russell Ave., Watertown, Mass.

The Forty-second anniversary of the class was observed by a luncheon at the Engineers' Club on Saturday, January 5, and attendance at the Alumni Dinner on the evening of the same day. Gooding, Herrick, Keyes, Jenkins, H. F. Ross, J. H. Ross, Snow and Walker were present at the luncheon.

John P. Wood wrote from his home, Wayne, Pa.: "Your notice of the anniversary luncheon, as always, induces a wistful feeling that I would like to gratify. Remember me to those present, most of whom naturally will need some prodding of memory to recall me at all after the passing of so many years."

Munroe was unable to attend on account of the necessity of his presence at the regular meeting of the Twentieth Century Club of which he had just been elected President.

The business address of George Faunce is now Pennsylvania Smelting Co., Second National Bank Building, Pittsburgh, Pa.

1884

HARRY W. TYLER, *Secretary*, M. I. T., Cambridge, Mass.

The annual report of the Librarian mentions the receipt of a sum of money from Miss Emma O. Conro given to the Institute as a tribute to Professor Sedgwick, in whose department she was a student at the time when the department was first organized. This money was used to purchase a copy of "Histoire naturelle des poissons d'eau douce de l'Europe Centrale" by Louis Agassiz, which was added to the Sedgwick collection.

The following letter dated December 24, 1923, was received from F. H. Newell:

"Just now I am continuing along parallel lines of conservation and home-making in helping Governor Pinchot on his Giant Power Survey, which has for its ultimate object the development of cheap power and its use by greater numbers of people, particularly on the farms. It is hoped to work out a feasible plan by which there will be a larger use not only of the water powers of Pennsylvania and adjacent states, linking these together for mutual economies, but more than this to bring about the best use of the dual resources of the state, deriving power from the great banks of culm or waste fine anthracite, which now are being washed into the rivers by the occasional storms, filling the channels and destroying adjacent lands. More important, however, is the handling of the bituminous or volatile coals of the western part of the state, which, theoretically at least, should be consumed at or near the mines, shipping the power by wire or in gas pipes, instead of in railroad cars and recovering the by-products for the manufacture of fertilizers and for innumerable other industrial purposes."

1886

ARTHUR G. ROBBINS, *Secretary*, M. I. T., Cambridge, Mass.

The Secretary has just learned of the death, in Los Angeles, California, of Frederick W. Eaton, who was a member of the class during its first two years at the Institute.

Failing health made it necessary for Mr. Eaton to leave the Institute and make his home in the West.

Subsequently, he was able to return to his native city, Malden, where for a number of years he has been active in the civic and social life of the city.

A recent announcement of a special committee of the American Chemical Society includes the name of Arthur A. Noyes among the twenty-one living American chemists of international reputation.

1888

WILLIAM G. SNOW, *Secretary*, 112 Water St., Boston, Mass.

Edwin S. Webster has been appointed Honorary Boston Consul for the Japanese Government. Japan's regular consular business will be conducted as usual by the Japanese Consul at New York, but Webster will be the nominal representative of Japan in Boston.

Twelve members of the class attended the interesting alumni meeting and dinner at the Walker Memorial building on January 5.

Those of us who had the privilege of attending Tech, under General Walker, will find his biography by James P. Munroe of great interest.

Fred J. Wood, nowadays chiefly in the South, called on the Secretary on one of his recent visits North and mentioned a very pleasant little visit with our old friend, Quigley, in Birmingham, who wanted to be remembered to all the boys. He was greatly

## 1888 Continued

disappointed that he could not be with us on our Thirty-fifth Anniversary in Duxbury last June.

## 1890

GEORGE L. GILMORE, *Secretary*, Lexington, Mass.

Mr. and Mrs. Cabot J. Morse have closed their house at 330 Dartmouth Street, and are spending the winter season as usual at the Bon Air-Vanderbilt in Augusta, Ga.

The following changes of address have taken place: Charles H. Alden is now located at 631 Central Bldg., Seattle, Wash., and Hiram E. Baldwin at The Brown Hoisting Machine Co., Cleveland, Ohio.

I regret to report the death of Frank L. Packard of Columbus, Ohio. Frank was the architect of the New Capital Hotel at Columbus, Ohio, and was one of the foremost architects of the United States; a man who attained international fame through his ability in his profession. Mr. Packard had drawn plans for some 3000 other public buildings, and many private homes, the later being rated among the finest in the city of his residence.

Mr. Packard did not live to see the New Capital Hotel, the child of his genius, ready for use, although he was in this city many times during its erection, for he died on Friday morning, October 26, 1923, just thirty-one days before the hotel was open to the public, following a stroke of apoplexy.

Mr. Packard was born in Delaware, Ohio, on June 11, 1866. He attended the Delaware public schools, and at the age of fifteen years was chain carrier for the County Surveyor. He began his professional career as office boy for F. A. Gartner, an old-time architect and engineer of Delaware, his ambition crystalizing then in a desire to study architecture. He took special courses in architecture and engineering at Ohio State University, and was with us in our class at Tech for two years, following which he opened his office in Columbus in 1892, and his first big commission was that of architect for the Girls' Industrial Home of Delaware.

One of his commissions was that of personal representative to the late President Harding in selecting the site, planning and constructing the United States Embassy Building at Rio de Janeiro, Brazil. He made one trip there for that purpose. At the time of his death he was working on a new City Hall and Auditorium for the city of Lexington, Ky.

He had served as President of the Columbus Chamber of Commerce; was a trustee of the Ohio Archaeological and Historical Society; was a member of the Engineers' Club of Ohio; and a fellow of the American Institute of Architects.

At the Annual Alumni Dinner at Walker Memorial on January 5, 1924, the Class of '90 was represented by the following members: Frank W. Atwood, John L. Batchelder, Harry B. Burley, John O. DeWolf, George L. Gilmore, Harry M. Goodwin, Francis H. Kendall, Norman G. Nims, Allen H. Rogers, Willard H. Roots, and Charles W. Sherman.

If a few men of the Class of '90 who read these notes would get onto the job, we would have more information to give to the fellows of our class. Just drop a line to your Secretary about anything you do of importance, or know of any of the rest of the gang, and it will be appreciated. Also, any time you strike the Hub, just remember there will be trouble later if you do not let your Secretary know, as you can usually reach him by telephone.

## 1892

JOHN W. HALL, *Secretary*, 8 Hillside St., Roxbury, Mass.

Sumner B. Ely, a graduate of 1892 with an S.B. degree, is Assistant Professor in the Department of Commercial Engineering at the Carnegie Institute.

The following clipping from the Scranton (Pa.) Times for November 14 will be of interest:

"Brigadier General Logan Feland, who also spoke before the great meeting held by Keystone post, is a native of Hopkinsville, Ky., and was graduated as a Bachelor of Science in architecture from the Massachusetts Institute of Technology in 1892. He was captain of Company F, 3d Kentucky Infantry, in the Spanish War, from which position he was honorably mustered out in 1899. Soon afterward he was appointed first lieutenant in the United States marine corps, rising until in 1920 he became brigadier general. He served in Cuba, the Philippines, Panama, Santo Domingo and various periods at sea, arriving in France on June 13, 1917. He took part in the World War and was awarded many medals for exceptionally meritorious service. General Feland was cited in General Orders 40, headquarters 2d division, July 5, 1918, for displaying a high type of courage in leading the 17th company of infantry into action after it had lost its way. He also received the Croix de Guerre with palm for the glorious part taken by his regiment in the attack on German positions in the Champagne between Blanc Mont and Medeth Farm. He is an officer of the Legion of Honor."

A clipping from the Boston (Mass.) Commercial Bulletin for December 29, 1923, will also be of interest:

"The New England fire insurance fraternity is greatly pleased at the announced appointment of Gayle T. Forbush as U. S. Manager of the Royal Exchange Assurance Company, as of January 1.

"Mr. Forbush, who is 53 years of age, was graduated from M. I. T. in 1892. From 1892 to 1905 he represented the German-American as special and general agent, resigning to become general agent for New England of the Royal Exchange Assurance, then under the management of Uberto C. Crosby. Subsequently, he was transferred to New York as general agent at the head office, being shortly after advanced to the position of assistant United States manager and since 1920 has held the title and duties of associate manager with Everard Stokes, who retires from the service of the company on December 31."

## 1894

SAMUEL C. PRESCOTT, *Secretary*, M. I. T., Cambridge, Mass.

President Bovey has appointed a committee consisting of Messrs. Piper, Tenney and the Secretary to arrange for the Thirtieth Anniversary Reunion, which will take place in June. As soon as the committee can perfect general plans, a letter will be sent to all members of the class on this subject. As a result of some correspondence and a number of personal interviews, the plan which seems to meet general approval on the part of the class is to have the reunion at the same place and under the same general conditions as our reunion of five years ago, which members will recall was at East Bay Lodge at Wianno on Cape Cod. Here, there are abundant facilities for golf, sailing, swimming, baseball and other forms of indoor and outdoor sport and in view of the enjoyment which we had there five years ago, it seems certain that we could not do better than to repeat the experiences of that time.

The Secretary will be very glad to receive suggestions from any member of the class as to forms of entertainment which they would most enjoy and if it is at all possible to do so, arrangements will be made to provide the necessary facilities. Without waiting for the class letter which will, we hope, be sent within a very short time, all members of the class are urged to reserve some time about the middle of June for a trip to Boston and the reunion. As graduation comes about the tenth, it might be desirable to arrange our program for the days immediately before and after this time, thus giving an opportunity for the members of the class who have not been to the Institute in recent years to see how the graduation exercises are handled at the present time. No doubt it would be possible for the class to attend in a body. The Secretary would be glad to have expression of opinion from members of the class as to whether this plan appeals to them or, on the contrary, whether they would prefer to give up the time solely to reunion festivities among ourselves.

At the Twenty-fifth Reunion in 1919 we had a total attendance of about fifty men and it is hoped that we may even exceed this number for the 1924 Reunion. In view of the fact that there are forty-three men within easy reach of Boston and as many more probably within two hundred miles, it seems as if we ought to get an attendance of at least seventy-five to one hundred for our Thirtieth, for it is already assured that men from St. Louis, Chicago, Minneapolis and other points in the Middle West will be on hand. The Secretary urges that every member of the class constitute himself as a part of the program and entertainment committee and take every opportunity from this time on to urge those of his classmates whom he happens to meet or to write to that it is a matter of class loyalty as well as a source of great enjoyment to attend so important a reunion. To those in distant places who may only occasionally visit Boston, let me urge at this time that you attempt to arrange your business and personal affairs so as to bring you to Boston for the reunion. The date will be fixed within a very short time in order that definite plans may be made early and that other engagements will not be entered into which will prevent attendance.

All who were present in 1919 have expressed themselves most enthusiastically as to the pleasure derived from that reunion and it is hoped that not only those, but many who have not had the opportunity to attend reunions in the past, will make a special effort to come this year.

Be on the lookout for special announcements and bulletins from time to time bearing on this subject and don't throw any letters from the Institute in the waste-basket without subjecting them to careful scrutiny for the latest news of 1894's big time.

The class was well represented at the annual dinner on January 5, ten members being present: Adams, Cheney, Prescott, Chase, Breed, Reynolds, Weston, Thorndike, Lacount and Nash.



1894 Continued

The papers have recently announced the engagement of Rigby Wason who, since his graduation, has been in business in England and who resides in London with a country home in Scotland. His many friends both in '93 and '94 will, I am sure, be glad to extend their warm congratulations and best wishes for his future happiness.

## 1896

CHARLES E. LOCKE, *Secretary*, M. I. T., Cambridge, Mass.  
J. ARNOLD ROCKWELL, *Assistant Secretary*, 24 Garden St., Cambridge, Mass.

The Secretary is almost ashamed to take his pen in hand and inform the classmates that he is such a weak and ineffective individual that he has again been unable to secure any word from Charlie Hyde and therefore must again apologize for the lack of a report from Charlie, giving an account of his last year's European trip and his misfortunes from the Berkeley fire. While the Secretary would not want to make any rash promises, he feels that Hyde will surely report sometime and hopes that this report may come forward in time for the next issue.

At the Annual Alumni Dinner in Walker Memorial on January 5, '96 turned up with nine classmates as follows: C. W. Tucker, Rockwell, Hultman, Mrs. Helen Chamberlain Dodd, Root, James Driscoll, Harkness, Joe Knight, and C. E. Locke. Root made the trip from Pittsfield especially for the occasion. He reported that everything was satisfactory in the western part of the state. Time deals very lightly with Root and has not subtracted as yet any hair from his head nor added any avoirdupois to his body.

Joe Knight reported that he had made a southern trip some time ago and while in Florida had called upon Horatio Parker in Jacksonville and the two together had gone on a wild time to Pablo Beach, south of Jacksonville.

Dr. Rockwell reported that he had become venturesome in making his annual southern trip early in the fall. Never before has he dared to go beyond his old home at Harriman, Tenn., but this year he struck out boldly and went way down to Texas. He was particularly impressed with the cities of San Antonio and Houston. In the former he had ample time to visit the Rice Institute and was much impressed by it. In Houston he had only about five hours and did not really have a satisfactory stay because he made the mistake of not getting in touch immediately with Joe Howe on his arrival. The result was that he did not know that Joe was there and Joe did not know that he was there. Rockwell arrived back in New England safely and is now on regular winter schedule. He reports that Mrs. Rockwell has fortunately been fully restored to health from her illness of last year.

As noted in the last issue of The Review, Mrs. Dodd is located in Boston this winter, being associated with her sister, Mrs. Elizabeth C. Darling, at 87 Pinckney Street. This is an enterprise known as the Oxbow Antique Shop and is to be run in connection with the Twinflower Farm at South Newbury, Vermont. In addition to antiques, Mrs. Dodd and her sister are serving light refreshments and especially waffles and many forms of her various maple products. This year the family is divided and Mr. Dodd remains in Vermont, while Mrs. Dodd is in Boston. In the spring, Mrs. Dodd will naturally return to Vermont to look after her interests there. Mrs. Dodd and her sister will welcome Technology people and especially classmates of '96. The Secretary will guarantee that any visitors will find Mrs. Dodd to be a wonderfully entertaining hostess full of ideas and eager to discuss relations of city and country.

Louis B. Breed who has been for many years with the Westinghouse Company has transferred from the Pittsburgh office to the East Springfield, Mass., plant.

Classmates will regret to hear that John Dove has come to ill health. He is still located on the Butternut Brook Farm at Litchfield, Conn., but is incapacitated for work. Those who remember Dove as a student and especially later at our Twentieth Reunion at Saybrook, Conn., will appreciate that misfortune could not dim John's good nature and cheery soul and this is actually the case. John insists that in spite of all that has happened to him, he is not out yet. In a recent note to the Secretary he wished to be remembered to all the fellows.

Delayed information indicates that Elmer A. Snell died on October 28, 1922. Snell was here only in the freshman year and thus did not become so well known as many other classmates. He has lived in Holbrook, Mass., and left a wife and four children and also a mother, father and one sister.

Mort Tuttle, who some months ago formed the M. C. Tuttle Construction Co., reports that among the jobs they are on is a kraft paper plant at Munroe, La.; a power house for the M. T. Stevens Co., at North Andover, Mass., and a storehouse and library for the Beechnut Packing Co., at Canajoharie, N. Y.

## 1898

A. A. BLANCHARD, *Secretary*, M. I. T., Cambridge, Mass.  
No notes received from the Secretary.

## 1900

GEORGE E. RUSSELL, *Secretary*, Room 1-272, M. I. T., Cambridge, Mass.

Sixteen members of the Old Guard appeared at the recent Annual Reunion and Banquet in January. They were Draper, Dunbar, Bowditch, Fitch, Thurber, Silverman, Ingalls, Patch Newhall, Zeigler, Reardon, McCrudden, Cutting, Graf, E. G. Allen, and Russell. There is no significance in the order of naming, many of the heavyweights appearing at the end of the list.

Conspicuous by their absence were the following local men: Gibbs, Stearns, Bugbee, L. F. Smith, Burnham, Melcher, Ashley, Wastcoat, Wedlock, Priest, Neall, and a host of others. We missed them and spoke of them, feeling sure that the majority were absent against their will. The attendance, however, was large as compared with former gatherings or that of other classes of twenty years or more ago. Class stock seems to be quite bullish and no one need mention class spirit. It is right there! We may have thought differently in times past, but to those who gathered around the table the presence of the spirit of unity and good fellowship was mighty apparent.

Draper kept us going from soup to nuts. It appears he is the possessor of a fine voice and a lover of good music for, when he found copies of Russell's prize Alma Mater song on the tables, he insisted on an immediate rehearsal in order to give proper rendition to the composition when later sung by the six hundred present. The singing occurred just after the unveiling of the new Mural Painting, Alma Mater, and although the composer was down front in the limelight leading the struggle, he heard Joe's clarion voice, aided by Zeigler, Thurber and the rest, doing its bit to tell the crowd that 1900 was right on the map and holding the geographical center of class enthusiasm. Russell returned to the table after the singing to be loudly congratulated, as he thought, on the success of the song, but he found out that it was because of his election as Class Secretary. Thus is genius rewarded.

Bowditch was there. No one was surprised that he was there. For ten long years he has attended pretty much of everything in the way of a class meeting and by his earnest, faithful work as Secretary (a thankless job) has done more than any ten men to keep the class together. The spirit he has shown has been especially fine when one stops to consider that his first Alma Mater, Harvard, must rightly have a close grip on his affections and time. The class will always remember with gratitude his unpraised work of these past years. Here's how, Inky.

Frederick D. B. Ingalls is back again in Boston after an absence of many years and he is just the same boy as when he sat on the writer's left in Math. He is engaged in Heating and Sales Engineering at 136 Federal Street and would be glad to hear from his old friends. He, with his family, lives at Reading and has just commenced to squander his substance on radio.

One of the faces seen at the dinner which brought back old times and gave us pleasure, was that of McCrudden. When a man shows up after nearly twenty-five years of absence it surely does one's heart good. McCrudden is on the medical staff at the Robert Brigham Hospital in Boston.

Thurber is at the Charlestown Navy Yard and a sign on his front steps reads, "Commander C. D. Thurber U. S. N." As Head of the Bureau of Yards and Docks at Boston, he is the Public Works Officer for this District which, coupled with a side line as chairman of the Labor Board of the Yard, insures his strict attendance to duty. His one relaxation is dancing once a week at the Yard Hops, and 'tis said he swings a wicked foot. He returned about a year ago from a three-year sojourn in Honolulu, where he was the Civil Engineer for the Pearl Harbor Yard. Previously, he had been stationed at Brooklyn, Norfolk, Great Lakes Station, Philadelphia and Washington. He has had a fine experience, done some nice work, and has helped embalm many millions of the taxpayers' money in such enduring mausoleums as concrete dry docks, piers and warehouses. Freddy Cook is another one of these Navy gentlemen and we hope to say something about him in the next Review.

George Archibald, whom the Civils will always remember, came down out of the Canadian Wilds a little while ago and was entertained by Bowditch. He is much interested just now in a new proposition in the way of a portable cement garage for private owners. He has something that can be cast in slabs, set up easily and equipped with a roof in such a manner as to give any desired effect from a bungalow to a castle. 'Twas Archie that brought the famous Jonah song to the Summer Camp at Cherryfield, Maine, in 1898.

## 1900 Continued

Speaking of Cherryfield reminds the writer of a trip made a few years ago through that section of Maine. He stopped at the town and for an hour drove about hunting out the old places where the gang lived, worked and played. The village had changed little, but when he began to check up old faces he found himself realizing that twenty-five years bring great changes. Most of the young folks had moved away and the older ones had passed on. At the Cook house on the hill where so many of us lived, all had died but the two boys. 'Twas with a feeling of genuine sadness that he got into his machine and said goodbye to the sleepy little village.

Frank Chase showed up at the 'Stute one day recently and gave us a brief call. Of all the men who disappeared from here some twenty-three years ago, he seems to hold the record for keeping young and full of pep. Outside of a little extra flesh and a disgustingly healthy, prosperous look, you would think he had just come out of a good sleep in Physics Lecture. Chase needs no write-up in this column to make his doings and whereabouts known. It is well understood that he is the moving spirit of Frank D. Chase, Inc., of Chicago, Ill., an engineering house that makes a speciality of industrial plants of all kinds. Their buildings dot the landscape of every state in the Union and branch offices have been established in several of the large cities. Frank is one of the men of our class to whom success has come in a large measure, but it is only fair to success to say that he never moved and that Frank went all the way himself.

In presenting the office of Class Secretary to the writer, Ziegler explained that its acceptance was really an act of class charity and on the basis that charity begins at home, the following items relative to men now at the Institute are inserted.

Arthur C. Melcher has for years been associated with the Department of Chemistry, but for some years past has given all his time to the position of Manager of the Division of Laboratory Supplies. In 1900 there wasn't any such thing, but, with the tremendous growth of our Laboratories it became necessary that a buying and distributing organization be built up to handle the immense volume of supplies which were necessary. In this organization, Melcher is it, having a large staff under him. He promised to write this article but didn't come across and so he will pardon, we know, its modest brevity.

R. G. Burnham is another of our men at the Institute. For a number of years after graduation he held various positions with Lockwood Greene Co., Pennsylvania Steel Co., Library Bureau and others, but feeling the lure of teaching he allowed himself to be enticed again within the walls of Tech and for years he has given yeoman service in the Department of Mechanical Engineering. His work has been mostly in connection with Mechanism and Engineering Drawing, to which he has added abundantly by outside work. He says he is "still without wife or hobby" but we know that a motor boat at Essex will at any time make him forget there is any such thing as work.

L. S. Smith is Associate Professor of Theoretical and Applied Mechanics. We are not sure that we understand what it all means but we hear on good authority that his students do, and that he can get it across in a way that is surprising. He is another radio fan and is so badly bitten that he plans to continue his experiments this summer in his camp on Lake Ossipee. N. H. Smith hasn't changed much, the change being mostly in his habits. The last change in this respect was the discarding of the use of the hairbrush.

Edward E. Bugbee responded to the third prod for a little squib about himself and we wish we could print the whole of his letter. "I had grown to believe that the class was not only dead but interred and here you come along and propose to dig it up and put back the breath of life into its cold body." Oh, no, Eddie, you're wrong. We are digging you out and letting you know that while you have been disemboweling the earth of its gold, the old class has gotten together and is a real, live, human, throbbing organism. Bugbee is Associate Professor of Mining Engineering and Metallurgy. His textbook of Fire Assaying, published by Wiley & Sons, has been well received in the mining schools of United States and Canada. He finds time each summer to travel to the mining states on examinations. This last summer he was at Cripple Creek, Colo. His hobby seems to be shooting ducks and making quohog chowder at his camp at Mashpee on the Cape. He is a good cook as the writer will testify.

Last of the bunch here, is your Secretary. He has been back since 1906. His work for some years was scattered over several branches of Civil Engineering but gradually he has specialized in Hydraulics and allied subjects. On the resignation of Professor Dwight Porter he succeeded him as Professor of Hydraulics. Like Bugbee, he muckles the poor students by selling them copies of his text on hydraulics which was first published in 1909 and is now about to reappear in a new dress. He has found time and opportunity to engage in outside consulting work, the last large job being his work as expert for the U. S. Industrial Alcohol Co., whose molasses tank in Boston was destroyed early in 1919.

The litigation arising out of the disaster involved an ad damnum of about two and one half millions of dollars and court hearings covering a period of over three hundred days. Experts from Technology and Harvard figured largely in the case. Over nine hundred witnesses were examined, some fifteen hundred exhibits placed in evidence and approximately thirty thousand pages of testimony recorded. "And the end is not yet."

Russell claims he has the Class Boy, inasmuch as he seems to have been the first man graduating in 1900 that was blessed with an increase. His son, Edmond E. Russell, graduates this year from the course in Naval Architecture. As previously noted, Russell won the recent contest, open to alumni and undergraduates, for an Alma Mater song.

## 1901

ALLAN WINTER ROWE, Secretary, 295 Commonwealth Ave., Boston, Mass.

Since writing the last class notes your Secretary has made a brief Western trip and both in St. Louis and in Washington had the pleasure of meeting groups of Technology men. The season of the year was inauspicious — Christmas and the concomitant New Year are traditionally dedicated to the enjoyment of someone's fireside — but even so, your Secretary received a charming and gracious hospitality and saw a number of earlier associates. It so chanced in St. Louis that no '01 men were present at the meeting. New Year's Eve was spent with a group of the Washington Alumni at the Cosmos Club. Allen McDaniel and Whiton are both living there now, the former being President of the local club.

Mac is doing some sort of educational work. He was a little vague in his statements concerning its exact nature, but this your Secretary inferred to be suspicion of the writer's capacity to grasp the intricacies of the work rather than from any native secretiveness on Mac's part. It has something to do with vocation, also with standardization, though I believe not a phase of Dr. Stratton's earlier activities. Which reminds me that, a few years ago, lunching with two outstanding luminaries in the educational constellation, the writer was moved to speak with some bitterness of the Henry Fordizing of education. In reply to which, one of the luminaries — to carry out the metaphor — scintillated the fact that he and his colleague were on a standardizing agency to standardize the standardizing agencies. Some of you may remember that little verse of childhood about the great fleas and the lesser fleas.

Whiton is in the Treasury Department, a designation that conjures up a broad and smiling vista of pleasing solvencies. Your Secretary only regrets that he was uninformed of this opulent connection earlier, as it might materially have affected his plans.

Both of the fellows seemed to be very happy and contented and are apparently succeeding greatly in their respective lines of activity.

Louis Williams writes from Detroit, Michigan, that he is Manager of the Land & Gravel Plants of the United Fuel and Supply Company of Detroit, Michigan. To a resident of New England this happy juxtaposition of gravel and fuel throws a beaming light upon certain of the heating and ventilation problems with which this portion of the country has been wrestling in the last few years. One cannot too warmly applaud the honesty set forth in the designation of the company. Louis also states that he is President of the Detroit Engineering Society, first Vice-President of the Detroit chapter of the A.A.E. and a member of the Council of the Associated Technical Societies. Louis says that his oldest daughter has just been graduated from the High School, which once more brings to our attention the fact that the years are slipping by.

F. H. Bond, Jr., is now associated with the firm of J. D. Leland & Company, at 41 Mt. Vernon Street, Boston.

Chester Chubb is in Davenport, Iowa, and is Vice-President and General Manager of the People's Light Company, supplying both gas and electric service. Chubb conveys the glad intelligence that he is the proud father of a fifteen-month old boy, which with a mixture of paternal pride and inherent modesty, he designates as "nice." Other parents please note.

Since penning the above, your Secretary has just come on an official statement from McDaniel which he herewith abstracts briefly: "During the past year I have been on a special assignment which comprised a study of the engineering profession with a view to the preparation of descriptive statements of essential qualifications or minimum specifications, which will serve as a basis for the selection, assignment, transfer and promotion of engineers, and as an objective for analyses by engineering educators for the preparation of their curricula. I have been the active Chairman of a committee of engineers, educators and personnel experts which is just completing a report of the highway engineering field. This report has been described by articles



## 1901 Continued

in a large number of technical journals, and it is expected that it will be published soon in pamphlet or book form. There is a great demand for material of this kind by employment bureaus, civil service commissions, classifying agencies, highway commissions and similar organizations as a guide for the selection, allocation and promotion of highway engineers. Such a report will also be of great assistance to the highway engineer, who is seeking to prepare himself for a higher position. The American Council on Education, the National Industrial Conference Board and other organizations have given the report favorable consideration from a technical point of view."

Norman Skene writes from Bedford, Massachusetts, that a third child was born to him a year ago and a third edition of his *Yacht Design* will be out in the near future. This fecundity is always laudable.

A. J. Taylor writes from Charlestown, Maryland, that he is chief engineer of the Delaware School Auxiliary Association engaged in construction of schools throughout the State of Delaware. This is an association incorporated under the laws of Delaware for distribution of the fund established by Mr. Pierre S. du Pont for rebuilding the public schools of Delaware.

Perk Parrock, who of later years has developed nomadic tendencies, is now serving as a consulting engineer at 131 State Street, Boston. The cognoscente will recognize this address as the domicile housing two other distinguished members of the Class of 1901. Your Secretary learns indirectly that it was proposed to hold a 1901 celebration in the building but the other tenants — and there still are other tenants — registered so strong a protest because of the involuntary character of their participation that the project has been given up.

Charlie Bittinger writes from Duxbury, Massachusetts, in emulation of the traditional reserve of the mollusc which made this town famous. Bittinger writes a few pleasant words to your Secretary which the latter's modesty forbids transcribing.

R. E. Dow is Plant Superintendent of the General Chemical Company's plant at Bay Point, California. His few halting words convey the idea that he is isolated from all Tech influences in the sterile profusion of our garden state. Of course, there is (or are) always the movies.

Mr. and Mrs. Farnum Dorsey of New York have announced the birth of a second daughter. The class congratulates or commiserates — the initial letter is the same — in accordance with the wishes of the parents.

## 1902

FREDERICK H. HUNTER, *Secretary*, Box 11, West Roxbury, Mass.

BURTON G. PHILBRICK, *Assistant Secretary*, 276 Stuart St., Boston, Mass.

Cards have been received, announcing the marriage of Harry Hooker, on December 15, to Miss Honore Frances O'Dea of Boston. The wedding was a quiet one and Mr. and Mrs. Hooker are residing for the winter at 76 Peterboro Street, Boston. Classmates are looking forward to making the acquaintance of Mrs. Hooker at the ladies' night of the class, which is planned for the near future. Hooker is open to congratulation not only on the happy event but also on his admirable nerve in attending a class dinner on the evening before he was to be married and not letting anyone suspect the impending event.

Matt Brodie's address (since the earthquake) is c/o the Engineering Department, Mitsui Bussan Kaisha, Yuraku-Cho, Kojimachi-Ku, Tokyo, Japan. Matt has been for some years the Asiatic representative of the Sullivan Machinery Co., with headquarters in Yokohama. We have not heard from him directly but through the courtesy of the Sullivan Machinery Company we are able to quote the following in regard to his personal experiences in the catastrophe.

"The day previous to the shake was a holiday (Friday) being the Emperor's birthday. Frank Jordan and I went to Miyanosita to spend over until Sunday evening. We were in the swimming pool which was wrecked, the walls falling in and the concrete bottom upheaving violently. The hotel was badly broken up and one-third of village burned (about one-quarter of it slid down to the bottom of canyon). One American at the hotel (which was crowded) was killed, and several injured. There were several bad land slides all around — bridges and roads all gone. We all camped in the hotel grounds until the fifth when some of us walked eighteen miles through mountains to Neumazu and reached Kobe the morning of the sixth by train. Since then we have been trying to get to Tokyo but so far cannot get necessary military permit to enter areas under martial law and state of siege." His letter was dated from Kobe on September 12. We hope to have more extended word from Matt in the near future.

Albert Lindsly has moved his home to 49 Nesmith Street, Lowell, Mass.—Harold Davis reports from Chelmsford, Mass., that his health is somewhat improved and that he hopes to be

in shape to take up some regular work before very long. This will be good news as Davis has been incapacitated for some years following a serious breakdown.—Miss Sarah L. Bates reports from Spelman Seminary, Atlanta, Georgia, where she is Head of the Economics Department that she has instituted courses this year in Qualitative Analysis and Quantitative Food Analysis. She has nine teachers in her department and nineteen classes. She also reports attending occasionally the Friday luncheons of the Technology Club of Atlanta.—Thayer Gates is operating the Gates Finishing Company, Medford, Mass., using the plant of the former Glenlyon Dye Works. While still residing in Providence, Gates will presumably move his family to the vicinity of Boston in the not distant future.—Herbert M. Hathaway has become a partner in the architectural firm of Starrett & Van Vleck of New York with whom he has been associated for several years.—Elliot Knight reports his temporary residence address as 715 West Washington Avenue, Santa Ana, California, and more permanently his business address is Shell Co. of California, Huntington Beach, California.

Can anyone furnish information in regard to the following men: William H. Horstman, J. Howard Redfield, Franklin H. Reed, Aaron Schwartz, and Irving Williams.

Mrs. Frederick H. Sexton of Halifax, N. S., died on December 14 after an illness of less than two months. We quote the following from the *Halifax Echo*: "In Mrs. Sexton's demise the City of Halifax and the Province at large lost a brilliant woman who devoted herself and her splendid ability unselfishly to work for the public weal. Her early death at the age of forty-three may be set down as a war casualty quite as certainly as if she had died at the front. There can be no doubt that her splendid and continuous work during the war and following the explosion did much to accentuate the illness from which she suffered and finally caused her death.

"Mrs. Sexton before her marriage was Edna May Best of Shediac, New Brunswick, her people being of old United Empire Loyalist stock in that province. In her early youth her family moved to the United States and she was educated in Boston. Specializing in Chemistry at the Massachusetts Institute of Technology, she graduated from that college with high honors in 1902. For three years, Miss Best, as she was then, did research work at the General Electric Company's plant in Schenectady, New York. The termination of her services there came when she married Professor Frederick H. Sexton (1901) whom she had met while studying in Boston; Professor Sexton being a student there at the same time. In the meantime, he had joined the staff of Dalhousie University, being attached to the Mining Department. It was to this city that Mrs. Sexton came as a bride in 1905, and it is here that for almost twenty years her splendid efforts have been directed towards public work, in peace times to community work of a varied nature; in war times to Red Cross and relief work to an extent that won the admiration of the entire province. In 1907 Professor Sexton left the staff of Dalhousie University and assumed the principalship of the Nova Scotia Technical College then just established by the Provincial government. Soon after her arrival in Halifax, Mrs. Sexton associated herself with the Halifax Ladies' Musical Club. While not a musician herself, she contributed materially to the success of that organization through her very active and practical executive ability. As her acquaintance in the city widened, she became interested in the Local Council of Women, where her services were invaluable. Then with the organization in this city of the Imperial Order of the Daughters of the Empire, Mrs. Sexton's abilities found further scope for activity in a society the objects of which appealed directly to her deep patriotic nature. As a member of the Princess Louise Chapter of the Order, and at one time Municipal Regent of the Daughters, Mrs. Sexton did a very notable work in extending the influence of an organization which had for its immediate work the preservation and the development of the historical traditions of the country.

"But it was upon the outbreak of the war that her exceptional executive abilities and her other qualifications for public service found full scope for usefulness. It has been said that no woman in the Province had a wider vision of what the Red Cross should do and be in those tragic days. Up to that time Red Cross work in the Province was largely confined to the efforts of small local organizations. When, with the stunning swiftness the war broke upon the country, there was immediate necessity for someone with a vision of what women's duties at home were and would be during the whole course of the struggle. It was into this breach that Mrs. Sexton came. She first suggested a province-wide organization; and that the men of the Province should be added to the women in the work and help bear the financial burden. Mrs. Sexton spoke before the Rotary Clubs and other organizations of the Province and her eloquent appeals stirred the imagination of all, inspiring them to the work of the Red Cross throughout the whole of Nova Scotia. It may be said



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1902 Continued

that she carried the torch of that society from one end of the Province to the other, rallying every aid possible, with the result that the Red Cross work of Nova Scotia held a foremost place in the war effort of all Canada.

"When the great explosion took place, Mrs. Sexton's efforts, which previously seemed to have been up to the limit of one's capacity, were redoubled, and her work in that connection was monumental. Friends close to her saw what the result must inevitably be. Her sacrifice demanded its price and resulted in a recurrence of a serious illness from which Mrs. Sexton had suffered some years before the war. On her recovery, she accompanied her husband abroad and they travelled through Great Britain and the Continent for several months. The following winter they spent in California.

"Since her breakdown in 1918, Mrs. Sexton hardly ever appeared in public, but her retirement from public activities did not lessen by any means her interest in the welfare of the community and she was almost in constant call for advice by those who were carrying on in her stead.

"Mrs. Sexton was a remarkable woman. She was exceptional even among the capable and brilliant women of this country. As a lecturer, there were few women to equal her for platform work in all Canada. Endowed with brilliant intellectual gifts, highly educated, and with unique qualifications as a public woman, all combined with splendid executive ability, Mrs. Sexton set a standard in public service for women of her country that will for a long time be a goal for their attainment."

Mrs. Sexton is survived by her husband (a member of the Class of 1901, M. I. T.), by a son Whitney Sexton, who is a student at Dalhousie College, and a daughter, Helen, who is in the Halifax High School.

Word has been received of the death in New York City on January 22 of Patrick H. Magrane. He was born in Lynn, Mass., in 1881, his father being Patrick B. Magrane the well-known merchant of that city. Magrane attended the Institute with our class for about two and one-half years. Subsequent to that, he was associated with his father in business, being several years the Manager of the Magrane-Houston Department Store on Washington Street, Boston. Since the sale of that concern he has been engaged in the brokerage business in New York.

Magrane was married in 1908 to Monica Markey of Brooklyn, N. Y., who survives him, as does a daughter, Martha, born in 1909.

Magrane will be remembered by his classmates as a very pleasant associate, and while he has not attended many of the class gatherings in recent years, he was a most welcome member when he did come.

1904

HENRY W. STEVENS, *Secretary*, 12 Garrison St., Chestnut Hill, Mass.

AMASA M. HOLCOMBE, *Assistant Secretary*, 3305 18th St., N.W., Washington, D. C.

As King Tut, or some other noble Roman remarked, "Tempus fugit." A startling illustration of the truth of that remark is the rapidity with which the date for "Review Notes" reappears. Although these dates are actually sixty days apart, it seems to the Secretary that one lot were mailed yesterday and the next lot is wanted tomorrow.

In the last issue, the Secretary offered a prize to the classmate who should send in the first letter giving some news for these notes. To date (January 25, 1924), the name of the prize winner is still hidden on the records of the future. One difference between this contest and the Bok Peace Plan contest is in the uncertainty as to the reward. The Secretary felt that the sportiness of not knowing for what the competitors were striving would increase the entry list and spur the entrants to great literary efforts. Apparently, the sporting instinct in the class is dead, and no sense of curiosity exists.

However, the contest is still open and the prize awaits a winner.

The class was represented at the annual dinner of the Alumni Association by five faithful members and the Secretary. It is his job to be faithful in such matters. It will probably be remembered by some that last year the Secretary sneaked out and attended a hockey game. There was a hockey double-header this year, but the tickets being all sold out, the Secretary had no intention of going to it.

The dinner this year was unique in one respect. For the first time since the memorable dinner in Horticultural Hall, Mert Emerson sat with us and sat at the head of the table. The other four faithfuls were Walter Whitmore, Ed Parker, Charlie Haynes, and the never-absent Hump Haley.

The Secretary received a Christmas card from Selskar Gunn, mailed from Constantinople. We never know whence the next

## 1904 Continued

communication from Gunnie will emanate. Perhaps the North Pole, or the forbidden city of Thibet.

Charlie Haynes also sent a card which was not exactly a Christmas card, although it arrived about that time. It contained a photograph of Charlie, arrayed in a wonderful Scotch golfing costume, addressing a golf ball, teed up on the roof of some large building in New Haven. His stance was perfect and words are inadequate to describe the costume. It is hoped he will wear it at the coming Twentieth Reunion in June.

It is the sad duty of the Secretary to record the passing of another classmate to the Great Beyond. John D. McQuaid died in New York City on November 10, 1923. He was born in Holyoke, Mass., on January 12, 1884, where his boyhood years were spent. He was graduated from Holyoke High School in 1900, and entered Tech with our class the same year, pursuing the course in Mechanical Engineering. He was a member of Phi Sigma Kappa fraternity, and took part in many student activities during our stay at the Institute. After graduation, he was with Frank B. Gilbreth, the noted contractor for two years. In 1907 he became connected with the Goetz Silk Manufacturing Co. of New York City, as General Manager, which position he retained until the time of his death. Mac was a genial soul, well loved by all who knew him, and we shall miss his presence at future gatherings.

Dr. R. B. Sosman of the Geophysical Laboratory, Washington, D. C., has been appointed by the National Research Council as American Member on the permanent committee for the Standardization of Physico-chemical Symbols of the International Union of Pure and Applied Chemistry.

In closing these notes, the Secretary wishes to remind you all of the coming Twentieth Reunion in June. You should have received the preliminary notice before this time, so further comment is unnecessary here. This is inserted merely to keep the matter fresh in your memory until the next formal notice. Let this strengthen your determination to attend.

Last of all, the Secretary wishes to express his sympathy with all those members who have writer's cramp, rheumatism in the fingers, or any other ailment which makes it impossible for them to write.

## 1905

ROSWELL DAVIS, *Secretary*, 19 Thorndike St., Beverly, Mass.

S. T. STRICKLAND, *Assistant Secretary*, 26 Pemberton Sq., Boston, Mass.

Eugen Kriegsman, who has not reported for some time, comes across with a tale of activities that reminds us of Mr. Heinz. From 810 Hobart Bldg., San Francisco, he writes: "I am sorry for you if you are out of news, as it is the business of a Secretary to be supplied with news. But if you can make some real news out of this letter, I shall be amply repaid for the time."

"I am still engineering, but in 1917 I cut loose from the paycheck and have persistently endeavored to make my own way in business, using my engineering talents in every way possible. The first work was in the efficiency line and finally the establishing of a new industry here. This led me to the business side of industry and in this part of the country there is a certain amount of promotion work required to get an industry started. So the Henry P. Adams Company was organized as a co-partnership to handle the promotion."

"About a year ago we reorganized a large chemical company that was slowly dying. We are out to make antimony sulfurets, which are used in the rubber trade, as part of our program to put this company back in trim. We have a large plant in the State of Washington, not now in use, which it is quite probable that we shall attempt to use for the manufacture of acetone by fermentation. There are a number of strings to our bow in this venture. If you know any of the boys who are familiar with any one of the materials mentioned, I would be glad to get in touch with them. We are also planning to open up a sales force in the eastern territory and this will require intensive work once our products commence to turn out of the plant in satisfactory manner. This will require the efforts of some clever men. Do you know any outside of us two???"

"There are at present seven jobs in our office, representing a diversity of thought and some of them quite technical. Our business is indeed a fascinating one and the trials are offset with the variety of work we get. At present, I have in the office a four-wheel auto brake and air operation like Westinghouse equipment that will probably go big. Compare this with working out a plan to build thirty brick bungalows in a specially designed park, and the chemical company and you will get a bit of an idea what it means."

"I was up to Pittsburgh Saturday last and spent the afternoon with F. M. Eaton, our classmate in chemistry. He is a part owner in the National Metals and Chemical Company and I believe they are doing nicely. Cartwright, an old Tech man,

is interested with him actively. Eaton has a little boy twenty months old. Got the old man beat for looks and for keeping quiet and Max was pretty mum for a grown-up."

"One day I was travelling toward the office and I met a fellow who looked familiar and smiled. He offered his hand and mentioned my name but had me stumped. Well, it was Moorehead. He used to have a table near mine in the engineering drafting room. He looks just the same as he always did. He is here in the interests of a Chicago concern that makes a business of financing and constructing hotels and high-class buildings. I have not seen him since, but fully intend to find out how he likes the California idea. Lombard stuck his head in the door a few days ago and said Hello!"

"The Tech bunch are going down to Carmel to see Dean Burton. He organized a private party of scientists and with crude apparatus brought in the only photos of the recent eclipse of the sun out of all of the parties which were stationed here on the Pacific for that purpose. I expect that we shall have a regular reunion, as the dean was one of the boys at all times and still is."

"C. Robert Adams, my pal in class, is somewhere down near Modesto, where he owns a dredging equipment and is working a contract out. I have not seen him for several years, but I am sure that he would wish to be remembered to the bunch. My best wishes to all."

Fourteen Fivers showed up at the annual banquet of the Alumni Association, the largest and loudest delegation from any nearby class.

Another waif has been found. One who successfully isolated himself for years has been re-discovered by George Thomas who says: "An ex-friend of mine, Frederick P. Poole, is anxious to join the Alumni Association. There is considerable doubt in my mind as to whether he should be admitted, but if the Powers That Be decide to permit him to join, my suggestion would be that he pay a good stiff initiation fee — say, twenty-five dollars; and I would further suggest that he be made to repent for his delay in 'sackcloth and ashes.' Mr. Poole's address is P. O. Box 13, Owen Sound, Ontario, Canada."

It is surprising that Thomas would suggest such punishment except for the fact that Poole was one of the Bolsheviki of Concord Square. Another, Selskar Gunn, was once the target for George's wit and immediately declared himself a member of '04. For all we know, Poole may claim '06, but this cannot be allowed even though there is nothing in the letter to indicate that he wishes a place reserved in our card index.

A questionnaire has been circulated among the alumni for the purpose of getting a line on their ideas in regard to another general reunion. The natural time is 1925 and we see no reason why it should not be run in connection with our Big Twentieth. Certainly it would be no drawback and perhaps would help to get more of us back. Let's have it.

## 1906

J. W. KIDDER, *Secretary*, 50 Oliver St., Boston, Mass.

E. B. ROWE, *Assistant Secretary*, 108 Water St., Boston, Mass.

Nine members of the class attended the Alumni Banquet held in Walker Memorial on January 5. They were: C. F. W. Wetterer, E. B. Rowe, O. S. Pulman, G. R. Guernsey, J. W. Kidder, A. B. Sherman, C. L. Kasson, W. G. Abbott, and Q. Emery.

The following is taken from the Covington (Kentucky) *Post* of November 3, 1923 and is a portion of a column devoted to birthday congratulations extended to two prominent Cincinnati citizens. One of the citizens is Bob Doepke, Vice-President of the Alms & Doepke Company. The *Post* has this to say about Bob:

"Doepke was born in Cincinnati. He attended the public schools, Cincinnati Technical School and Massachusetts Institute of Technology at Boston. When twenty-one he entered the employ of the Alms & Doepke Co., and soon became a Director. At the death of his father, William F. Doepke, in 1908, he was elected President of the company. Doepke also is identified with many commercial concerns. He is Vice-President of the City Hall Bank, a Director of the Second National Bank and President of the Blue Ash Coal Co., and the Union Special Overall Company. He is a member of the Business Men's Club, Queen City Club, Auto Club, Cincinnati Country Club, Lotus Club of New York and Technology Club of New York. He is married and lives at 2137 East Hill Avenue, Walnut Hills."

## 1907

BRYANT NICHOLS, *Secretary*, 2 Rowe St., Auburndale, Mass.

HAROLD S. WILSON, *Assistant Secretary*, Manchester, N. H.

John Chadwick, in his mining engineering work, has made another shift and is now with the American Smelting and Refining Company, Casilla, 6 D, Santiago, Chile, South America.—

THIS is primarily a bank for manufacturers, in which Technology men engaged in manufacturing in Boston and Cambridge will find friendly interest and assistance in their banking problems.



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### 1907 Continued

Ernest F. Lewis is now at 137 East 46th Street, New York City.—The following clipping from the *Boston Transcript* for January 21 will interest those of our class who remember Truscott, who was at the Institute only during our freshman year:

"The Aero Club of New England will hold its annual dinner at the Harvard Club on Friday evening, January 25, and will have as its principal speaker, Starr Truscott, one of the engineers who designed the United States Navy dirigible Shenandoah. Mr. Truscott will give an illustrated lecture on the creation of the dirigible and its mission, with special reference to the plans for the coming Polar trip. The pictures to be shown will be views taken on the recent voyage of the dirigible over New England."

Willis G. Waldo has left Tennessee and is located at 1901 Columbia Road, Washington, D. C.

### 1908

HAROLD L. CARTER, *Secretary*, 185 Franklin St., Boston, Mass.

LINCOLN T. MAYO, *Treasurer*, 181 Massachusetts Ave., Boston, Mass.

Nineteen hundred eight was represented at the Annual Alumni Banquet, Saturday evening, January 5, at Walker Memorial, by Joe Pope, Silk Daley, Appleton, Herb Cole, Tully and Carter.

Our second bi-monthly dinner of the season was held at Walker Memorial on Tuesday evening, January 8. The following attended: Gerrish, Heath, Mayo, Newhall, Collins, Medicott, Davis, Cook, Carter and Schreifer. The change in having these dinners at the Walker Memorial proved a good one, as I think all present will agree.

The third bi-monthly dinner will be held on March 11, at Walker Memorial, at 6:30 p.m.

We haven't a whole lot of news for this issue and wish all the fellows would make an effort to send some in. Write us a note once in a while, please.

The following extract from the *Inland Oil Index*, Casper, Wyoming, will be of interest:

"Desaix B. Meyers has been appointed Assistant Chief Geologist of the Union Oil Company of California. He is also Chairman of the Southern California Section of the American Institute of Mining Engineers."

The Cincinnati *Times Star* of recent date reports that Howard

Luther, Professor of Civil Engineering at the University of Cincinnati in charge of the Department of Civil Engineering, has been appointed Assistant to the Dean.

Win Ford is building a new house at Kingston and we understand this takes most of his time, which probably accounts for his not being present at any of the recent dinners.

Sam Hatch announces the arrival of Samuel Frink, Jr., born on November 27, at Fall River.

Alton Cook reports that the album of the Fifteenth Reunion is practically ready for distribution. If there are any who wish one of these copies they should get in touch with Cook right away, for after the first order has gone through, it will not be possible we understand to add to it.

Radio News: We understand Cook recently got Havana. "Everything comes to those that wait." We understand that in order to get results you have to do something to what he calls "a grid-leak."

You will hear from the Class Treasurer in a few days. Please give this letter your careful attention.

Have you signed that application yet for the New University Club? Don't put it off. Early action is urgent.

Don't forget the date of the next dinner. Make your plans now to come on March 11.

### 1910

DUDLEY CLAPP, *Secretary*, 40 Water St., East Cambridge, Mass.

R. O. FERNANDEZ, *Assistant Secretary*, 264 West Emerson St., Melrose, Mass.

From the above you will note that a new class office has been created and filled. The election was by an elimination contest (heads or tails) at the recent Alumni Banquet.

Grouped around the end of the table allotted to 1910 were: west side — Cleverdon, Wallower, Southerland, Babcock; east side — Crommett, Sittinger, Dunlap, Fernandez.

The east side got away to a good start in the broiled chicken contest and were never threatened for a moment. Chet Dunlap was set a hot pace.

The conversation was of old times, and too often as the once familiar names of the fellows were mentioned, none could account for their fate or fortune. Remember that the members of 1910 are just as intensely interested in each other as ever, and the class wants to hear from all in "News from the Classes."



## 1910 Continued

Even a line on a souvenir post-card to either Secretary will be welcome. For each issue of *The Review* we plan to write to fifteen members for contributions, order alphabetical, but please do not wait for a summons.

Herewith a charming bit of correspondence between the Secretary and Assistant Secretary: "I certainly appreciate your stepping into the breach to save the secretarial work of 1910 from total annihilation. The present incumbent of the Secretary's job has been noticeably negligent for some time past, for which I can only say 'mea culpa'."

"If any of my classmates are at the moment struggling to put a young business on its feet with no capital and less credit, they can realize something of the reason for my having little energy to spare for the class work. I can say today, that the Deecy Products Company, which is my baby, seems to be about to emerge from the doubtful stage and take its stand with the regular manufacturing concerns."

"I am still living in Watertown, with my office in Cambridge, and I still am anxious to hear from any of the fellows who care to write, even if I have neglected them shamefully of late."

The addresses of the following men are wanted: Davis, McMorow, Mellish, Lusky and Sweet.

It is good to hear from our old friend J. M. Fitzwater with Dwight P. Robinson & Company at Oros, Keara, Brazil, South America: "I came to South America last fall with others of the Dwight P. Robinson & Co., Inc., organization on a two-year contract for work in northern Brazil."

"The project includes five dams, and an infinite number of damns, in the dry sections of the country. The water storage will be available only for irrigation."

"Brazilian engineers are responsible for the engineering details of the work, so I have encountered only one Tech man here — G. Ireland (1914?)"

"In my present location I am only 4° south of the equator but find the temperature quite comfortable except in the months corresponding to our northern winter when it is really hot during the middle of the day for two or three hours. The nights are very comfortable throughout the year."

"We are excellently housed in quarters built entirely for the American staff and have all of the conveniences that are provided at home — electric lighting, ice, shower baths and water made 101% pure by that Wallace Tiernan Chlorinating apparatus which Bill Orchard tries to sell. Food is better than we allow

our families to provide at home. With chickens at the equivalent of twenty cents each and eggs at about one and one-half cents each, the wolf does not howl at our door."

"Letters addressed to me c/o Dwight P. Robinson & Co. at 125 East 46th Street, New York City, will be very welcome."

The following were gleaned from news clippings: "Another son of M. I. T. connected with the staff of the Carnegie Institute is Harold L. Lang, a graduate of 1910 with an S.B. Degree, who is Professor of Biology and Public Health in Margaret Morrison Carnegie College for Women."

From the Lewiston (Maine) *Journal*: "Mr. Carl T. Pomeroy has been Sanitary Inspector of the Massachusetts Board of Labor and Industry for the past seven years, but is making a change to take a position as Executive Head of the Health Department, Montclair, New Jersey. There are two physicians, two clerks, and two inspectors to serve under his direction. Mr. Pomeroy took his training at the Massachusetts Institute of Technology. Mrs. Pomeroy, it will be remembered, was Miss Marion Burnham of Lewiston."

We note from the letterhead of Alfred I. Phillips that he is a Consulting Engineer with offices at 1756 Hudson Terminal Building, New York City. He reports good business.

We have just learned with regret that our classmate, John M. Longyear, died on May 28, 1923.

## 1911

ORVILLE B. DENISON, *Secretary*, Room 3-207, M. I. T., Cambridge A, Mass.

JOHN A. HERLIHY, *Assistant Secretary*, 588 Riverside Ave., Medford, Mass.

Really, mates, it is getting shameful the way you birds are failing to "Write to Dennie" since I've been Executive Secretary. As they say, "Where U Bot the Hat?" Whatthellsthebigidea?

Just one letter during January, but that was mighty fine news, to wit and viz.: "Looky Here! — I'm a little New Year Baby (or Almost) 'cause I arrived December 30, 1923, you see. Dorothy and Oliver are going to take care of me in Auburn, New York — maybe I'll see you sometime." A caricature at the head of the very clever card announcing the birth revealed the fact that the boy is Robert Davis Powell, son of Mr. and Mrs. Oliver D. Powell. Congratulations, proud parents!

One letter I received, aside from the Powell glad tidings, was from Luis de Florez, alias Monk. We welcome him cordially back in the fold and present herewith his life-story:

"I believe this is the first letter I have ever written to you since I graduated from the Institute many years ago, and I have been reminded of my lack of interest in the class by a letter from F. J. Shepard, who has written me asking me for some news of my activities. I feel that although I graduated in 1912, all my associations are with 1911 and consequently I am writing to ask you to put me on your list for future reference."

"Somebody pointed out to me a letter from Merrill some time ago in which he stated that he had seen me and someone had remarked that they thought I must have passed into the Great Beyond. I can only quote the words of Mark Twain that up to the present this report is grossly exaggerated and that with the exception of the loss of a little hair, my bearings are still in excellent condition in spite of the ravage of time."

"I have been connected with the oil industry practically since leaving the Institute, my first work being done in England where I was connected with the Hall Motor Fuel, Ltd., and the Anglo Persian Oil. I built several plants for both these companies and designed toluol plants for the British and Russian governments, during the first part of the World War. I returned to this country the latter part of 1916 and designed and constructed a plant for the Texas Company, and after recovering from an illness, entered the Navy Department under Jerome Hunsacker, who was in charge of the construction of air craft for the Navy. In this work I had charge of the design of production instruments for the Bureau of Construction and Repair, and after the winning of the war from the business side of a roll top desk, went back into the oil business."

"Since then, I have been connected with the Invincible Oil Company, and the New England Oil Refining Company, of Fall River, Massachusetts, and spent the better part of five years in the design and construction operation of the plant. I resigned the position of Chief Engineer last September and went into consulting practice and am now Consulting Engineer for Arthur D. Little, Inc., of Cambridge and the Gasoline Products Company of New York."

"In the course of my wanderings I have come across many Tech men and had I been more mindful of my obligations to my class, I might have written you a few interesting incidents; however, I will try to do better in the future and will undertake to write you at least once every five years."

During my recent trip this month (January) through New



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### 1911 Continued

York State and Pennsylvania I had some delightful contacts with Eleveners. My first stop was Schenectady and lo and behold when I entered the wash-room of the Pullman just before reaching my destination, there stood Norman Lougee partially shaved and continuing that operation for the nonce. "For Gawd's sake," sez he. "For Gawd's sake," sez I. And we met on common ground thus. Norman had almost become a fixture at the General Electric Company, but recently has associated himself with Stone & Webster in Boston. By the way, 1911 will soon be a majority factor in the Boston office of Stone & Webster, what with W. B. Hopkins, M. J. Lowenberg, Tunnier Parker, Max Kushlan (whom I had lost track of for a number of years) and Norman Lougee on the staff.

In Schenectady I met O. J. Gilcreest and Bob Schurig and had delightful contacts with each of them. Harry Tisdale was away on business, but thoughtfully left a note for me with the chairman of the dinner committee expressing his regret at not being there to welcome me. I made a side trip to Albany and there had a delightful dinner and theatre party as the guest of Joe Harrington, who has forsaken the tax department of the State of New York and is now a successful industrial chemical engineer, having graduated in Course VI.

In Syracuse I saw C. W. Nitschke, a 1911 architect, and after the dinner he bawled me out, with perfect justification, for having said nothing about the architectural department while recounting the present conditions at M. I. T. — an unintended omission on my part. Continuing to Rochester I had dandy contacts with Syd Alling, Maus Colebrook and Charlie Meulendyke, the latter affiliating with 1910 although he received his degree with us. I had to be content with a couple of telephone conversations with Frank Taylor, as he seemed all tied up with business. Always was industrious, you know!

In Buffalo I ran across Raymond Roche and Art Underhill, and I also discovered that Carleton Eaton is no longer at the Buffalo plant of the Beaver Board Company, but is now at their plant in Cochrane, Ontario, while Paul Kellogg, well remembered in the rôle of Nero at the 1911 Ten-Year Reunion, has left Buffalo and is now in Kalamazoo, Michigan. From Buffalo I went over to the Falls and there met those old-war-horses, Norman Duffett, Secretary of the local club there, and Otis Hutchins. I also saw a lot of John Glaze, the former

Dartmouth athletic star, who finished his professional work at Tech, partly with 1911 and partly with 1912.

While in Pittsburgh I was entertained at the home of Mollie Scharff, '09, well known to most Eleveners, through his year spent as assistant to President MacLaurin. He is the same active, energetic chap and in addition is making a mark for himself in the engineering field. I caught Don Bakewell on the 'phone, just as he was about to leave on a short trip, so did not see him personally, but had a delightful 'phone chat. When I visited Carnegie Institute of Technology I called on Professor F. J. Evans, in charge of structures courses there. This is the same Freddie Evans who started with us and later left the Institute for a couple of years and was graduated with the Class of 1913. Then I had delightful renewals of friendship with Bunnie (I. W.) Wilson, who is with the Aluminum Company of America, and Rufus Zimmerman, with the American Sheet & Tin Plate Company. In response to a telegram I sent him from Buffalo, Kes Barr, dapper and debonair as ever, came over from Youngstown, Ohio, for the dinner meeting which I addressed, and as was polite and becoming, started the applause when I finished my speech.

When I reached Harrisburg I was surprised and delighted to find Hall Sargent happened to be back there after a long time spent in California in the interests of Dodge Brothers, the automobile pair. His home is in New Buffalo, Pa., but he has established an agency at 1139 Mulberry Street in Harrisburg. At the suggestion of Royal Barton, and with the aid of Dave Benbow, '12, I was able to address a small but enthusiastic meeting in Reading, while journeying from Harrisburg to Philadelphia. By the way, I learned the Barton's have another son just born this month. Both mother and youngster are doing nicely.

Over in Philadelphia (the last city I visited on this trip) I met Donald Giles, '13, who was originally an '11-er, but who like Evans left school for a while and finished with a later class. Also met Harry Hess, and William H. Martin, '07, who received his degree with us, as of the Class of 1907. Giles is with the Baldwin Locomotive Works and Martin with Day & Zimmerman, consulting engineers. Hess is now in business for himself as a structural engineer, he having graduated from the course in architectural engineering. I spent one of my evenings there as his dinner guest and we had a great reminiscing party. Harry

## 1911 Continued

wants me to tell '11-ers that he would welcome their making use of his office at 10 South 18th Street as a base for mail when in Philadelphia on business, or to make any other use of it for their business needs that they desire.

One word in closing—again in the parlance of the gaspipe-racks—Write to Dennie!

## 1912

F. J. SHEPARD, JR., *Secretary*, 568 East First St.,  
South Boston, Mass.

D. J. McGRATH, *Assistant Secretary*, 17 Gramercy Park,  
New York, N. Y.

Notes are still few and far between, and it is the earnest desire of your Secretaries that each one of the class consider himself a committee of one to see that more copious notes are printed in the following issues.

Lewis Davis, who took his Master's Degree with us in Biology, was the speaker at the dinner of the "Skeptical Chymists" of Worcester Tech on January 7. His talk was on the manufacture of biological products, dealing largely with antitoxins and serums.

A. F. Allen, XI, who was with the United States Health Service, is now located in the so-called "Magic Valley," which is within the triangle formed by Lorado, Corpus Christi and Brownsville, Texas. His assignment is the eradication of mosquitoes in this vicinity, and although this looks like rather a large order, he claims to have a control of better than 95% of the elusive mosquito. Allen goes on at quite some length describing the climate, natives and fauna and flora of the vicinity. By far, the most important point in his letter is the announcement of his marriage to Miss Jean Farley, of Sedalia, Missouri. Allen claims to be very much married, as inadvertently, the minister married them at the rehearsal a day before the official ceremony was to have taken place. There was nothing to do but repeat the performance before their friends, however, and he now rates as the "M. M. M." Funny things happen.

Louis DeFlorez, II, is now with Arthur D. Little, Inc., of Cambridge, as consulting engineer, and also is active in the same capacity for the Gasoline Products Co. of New York. Since leaving the Institute, his work has been in the oil industry, covering practically the world, as he started in England in 1913,

with the Anglo Persian Oil Co., going then to the Motor Petrol Co., Texas Co., Invincible Co., and New England Oil Refining Co.

Joe DesLoge, VI, is with his cousin, Marcel DesLoge, IV, in the Hillark Electric Manufacturing Co., at 3940 Eastern Avenue, St. Louis. He has recently changed his home address to 20 Kingshighway.

Milton Kahn, X, after receiving his discharge from the Army, entered the paper business, dealing in paper box boards, and is now located at 104 Hanover Street, Boston, Mass. Two and one-half years ago he was married, and now has a daughter one year old.

C. D. Davis, II, is now located at County Line & Roberts Road, Bryn Mawr, Pa. During the war, Davis was Assistant Superintendent of one of the Hog Island Yards, and later, Assistant to the General Superintendent of South Yard at New York Shipbuilding Corporation, at Camden.

Charlie Reynolds is now doing business under the name of Reynolds Bros., Inc., with offices at 179 Summer Street, Boston. Their work is principally road construction, although they will contract to handle nearly anything along general construction lines.

The 1912 delegation at the Annual Alumni Dinner held on January 5 consisted of Elliott Tarr, VI, Weenie Schell, II, Charles Reynolds, XI, and your Secretary.

As was stated at the beginning of this drool, news is needed. Send in some, please.

## 1914

H. B. RICHMOND, *Secretary*, 62 Tufts St., Arlington, Mass.

G. K. PERLEY, *Assistant Secretary*, 45 Hill Side Terrace,  
Belmont, Mass.

Two brilliant meetings of the class during the past month stand out in sharp contrast with the near absence of letters. Perhaps the distant members of the fold have some subtle idea that your Secretary has a peculiar and weird mechanism attached to his radio whereby he is able to lurk in their mental shadows and read the imaginary letters they have written to him. 'Tis not so and he is still groping around for bits of information telling him that fourteeners still live.

The Boston contingent has shown real signs of activity. The evening of the All-Technology dinner was marred by a blinding snowstorm but even that did not prevent fourteen fourteeners from attending. The two regular pilgrims were MacKenzie who found his way down from Derry Village, N. H., and Jimmy Judge who came across the state from Holyoke. Dean Fales was much in evidence, particularly around his vest. Being a professor at the 'Stute furnishes for Dean an ample setting only comparable to his fur coat of student days, or daze as Dean then spelled it. Art Peasley came up from Hartford. Art is engaged in the building and general contracting business and is out to convince any fourteener that New Haven is the greatest industrial city of the continent. Besides those already mentioned Johnson, Blakeley, Corney, Dunn, Swift, W. H. Warren, E. L. Osborne, Stubbs, Atwood and your Secretary were present.

On January 8, sixteen of the Boston group met at the Engineers' Club for luncheon. The meeting was one of the most enjoyable of the year. Pat Adams' hospitality started things off in the right direction and Chet Ober's stories of cannibals and snakes in the wilds of the upper Amazon made a very fitting post prandial. Gallene made his first public appearance since his recent new adventure. Walsh and Derry were present for the first time for several meetings, who with C. H. and H. S. Wilkins, Johnson, Ambler, Dunn, Crocker, Harper, Atwood, Corney, Perley and Richmond made up the party.

Capt. L. W. Burnham of the Marine Corps is all through persuading the natives down in San Domingo and is now busy polishing spur marks off of his desk at Marine Corps Headquarters in Washington. Another of our martial contingent to receive an office appointment is Lieut. J. H. Currier of the Navy. Currier has been on the U. S. S. Kittery and is now at the Radio Material Office of the Philadelphia Navy Yard.

A. F. Petts has completed his work with the Edward C. Brown Co. of Boston and is on the scouting line for a new berth. He passed on the information that Leathers is also on the scouting line, but is temporarily with the ex-Service Men's Anti-Bonus League of New York City. Leathers recently announced the arrival of a second daughter, Priscilla, on October 18.

It is the policy of your Secretary to refrain from hearsay notes, but here is one Osborne has passed on. Howard Borden was married again on New Year's Eve. Further details are lacking. Congratulations, Borden. If it isn't time, it ought to be.

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## 1915

FRANK P. SCULLY, *Secretary*, 118 First St., East Cambridge, Mass.

HOWARD C. THOMAS, *Assistant Secretary*, 100 Floral St.,  
Newton Highlands, Mass.

The class representation at the Technology dinner on January 5 was not very large, being composed of the following men: Danker, Munn, Blackmore, Brown, Ginsberg (II), Fales, Morrisson, and Scully. Danker is now in the oil business and has intimate knowledge of the Teapot Dome sales, and his discussion of this question was most enlightening, particularly interesting in view of the fact that at the time of the dinner, the disclosures which are now being made in the papers had not been made, and the statements that he made at that time have been borne out by the recent developments. Munn and Blackmore are still with Stone & Webster and their activities have been chronicled more or less in the class letters. Brown is building the new dormitory at Tech and has done a large part of the development work in the new system of construction which is being installed there. Dean Fales is still a Professor at the 'Stute and is as much a bug on the automotive industry as ever. Morrisson is in the shoe business in Lynn. Unfortunately, we have no record of what Ginsberg's activities are at the present time.

News from the class has been very meager. Another confirmed bachelor has "slipped," for on January 2 an announcement arrived, telling of the engagement of Miss Charlotte Holbert Bates and Everett Sharples Coldwell (VI). Miss Bates' home is in Jersey City. Coldwell has been living at the University Club in Bridgeport, and is connected with the Columbia Graphophone Company.

We have also a little notation from a Brockton paper: "S. L. Tolman of Chicago, with Mrs. Tolman, is visiting his parents. He is now in the employ of the City of Chicago as a sanitary engineer. Mrs. Tolman was Miss Mildred Skerrye, a former instructor at the Hanover High School."

In my search for news, I just called up Easty Weaver at Kalmus Comstock Co. and asked for the latest scandal about himself and Arthur Ball. Both Easty and Arthur have been working on colored moving pictures for a number of years, and Arthur has the distinction of being the official photographer. I understand that he is now back in Hollywood filming a Zane Grey story for Famous Players and that he has just finished a

most interesting picture with Williamson, the producer who features undersea pictures, entitled, "The Uninvited Guest," which will be released shortly and will undoubtedly be seen by a number of those who read these notes. It is taken in the Bahamas with Nassau as a base.

Jim Tobey writes from 370 Seventh Avenue, New York City:

"The February Review has just come out and if I do not write to you immediately, I shall forget your address for another month and the news of 1915 would thereby suffer the excruciating loss of this epistolary masterpiece. There might even be one of those painful issues which says, 'No notes received from the Secretary.'

"At the last up-town lunch of New York Tech men, a number of fifteeners were in evidence. Charley Williams by heroic efforts got out myself, Loring Hall, Pinkham, King, Bassett, and one or two others. Perhaps some time we will have a little get together dinner of noble nineteen-fifteeners.

"Since I abandoned Washington some seven or eight months ago I have been pretty busy in this hectic metropolis. If you will consult the new book lists you will find one by me entitled, 'The Quest for Health,' published by Funk & Wagnalls and will also discover my name as collaborator with Dr. Allan J. McLaughlin on, 'Personal Hygiene,' not to mention a score or so of recent magazine articles. Not for nothing was I once a cheer leader. I am giving a lecture at M. I. T. the middle of the month and a whole course of them on Public Health Law at Columbia next summer. You might enroll and encourage me with at least one student.

"If this doesn't keep your valiant column going for another month, don't blame me."

## 1916

D. N. BARKER, *Secretary*, 14 Marathon St., Arlington, Mass.

There are still several copies of the class directory left, and if any member of the class has not received one I will forward same upon receipt of your corrected address. Every man who returned his questionnaire and all men who have sent in their addresses to the Alumni Office since December 1, should have received one by now.

Professor Alexander Brest of the University of Florida writes as follows: "I have hesitated to send in news concerning myself as I had hoped that my work would some day speak for itself,

1916 Continued

but I guess my fond hope has not been realized and I will have to speak for my work. This is my fourth year at the University of Florida as Assistant Professor of Civil Engineering. G. E. Barnes, '23, is also a member of the Civil Engineering Faculty and I believe that both of us are striving to install Tech methods and ideals at the University. No, I am not married yet, and I have been unable to figure out how two can live as cheaply as one. Many members of the class have tried to prove the above to me, but without success.

"In addition to my University duties, I am Secretary and Treasurer of the Duval Engineering and Contracting Co. We have constructed a few miles of roads in Florida, and hope to build many more in the future.

"Very few Tech men visit Gainesville when they come to Florida, but go to Miami, Palm Beach, and the West Coast. I would be glad to welcome any Tech men that visit Florida and introduce them to the 'Great University of the South.'"

Duke Wellington, who has always been a live wire for 1916, can be depended upon for information and has sent in his monthly news: "It is a long time from the first of the month until now for a letter to remain unanswered. I have been in the State of Maine, in fact down in Aroostook, which may account for it or it may not. As for a good showing in the notes I think the worst knock that the class can get is to have the words, 'No Notes from the Secretary.' If each one would only do his bit once a year they would have to print a volume to take care of them.

"I am still at the same old job and travelling all over the New England States, but for some reason, I have not seen anyone from the class except P. C. Webber, whom I met one night on the train from Framingham to Boston. He has quite a knowledge of the classmates around Boston and should be able to tell interesting things of them. I would repeat them but might get them wrong and cause trouble. He had better come across and tell what he knows. When the directory reaches me I will put it in my brief case and it will go on my travels with me. No one will be safe if I stop in their town unless they previously made themselves known in The Review. Better come across with what you want known than something that you do not want known. You can never tell where lightning will strike.

"I have heard that H. L. Foster was in town, (Springfield, Mass.) lately, on his way from Washington, D. C. to Detroit, Mich. Why should he come that long way round?"

"Once more I want to warn everybody to remember that I am on the trail of all the class whom I can find in New England and to watch out."

Mr. and Mrs. Wesley H. Blank of Melrose, Mass., are the parents of a son, Wesley Howard Blank, Jr., born at the Melrose Hospital on December 13, 1923.

Chuck Loomis, who is at present roaming around the Middle West, has been heard from, this time from East Lansing, Michigan: "What news I have of '16-ers is mostly old or hearsay. I did see several at a dinner to Dr. Stratton in Detroit almost a year ago, Ted Hine, Pettibone, Phil Baker, Ullian, and myself I believe making up the '16 delegation. Later in the year, Hine, Pettibone, Baker and I put on a '16 golf foursome at the Technology summer outing. I've forgotten the scores, which you can take as a fairly good intimation that mine was not the low one.

"I was in Boston for a few days in late August and early September, attending a fraternity reunion, where I saw Pinkham, Stetson, Jewett, McDevitt and Keith, all '16. Pinkham is in business with his father, is married, and boasts one child. Brad Stetson continues to hold forth in Pottstown, Pa. I

understand he is the designer of the new city hall there. Tom Jewett is a successful road contractor, sports a Pierce-Arrow car—also Arrow collars, and is apparently coralling all the money in the world. Jack McDevitt had the great misfortune of having his home broken up by the death of his wife last spring. Many of us knew Mrs. McDevitt and can appreciate what a great loss this was. Stew Keith is with Bird & Sons in Walpole. Judging by the Christmas card just received, I believe Eddie Clarkson is ranching at Del Mar, California, on Santa Fe Ranch. When I saw him two years ago he was a cotton planter. 'Tis a strange path the sanitary engineer follows. As for myself, I continue to hunt the elusive bag buyers of Michigan with varying success."

We have learned from the Johns Hopkins Alumni Magazine for November, 1923, that V. L. Ellicott, VII, (M.D. Johns Hopkins) has been appointed epidemiologist to the Health Department of the city of Baltimore.

Mr. and Mrs. N. J. Vile announce the birth of a son, Judd Mason, born December 16, 1923.

H. P. Claussen, also with the Bemis Brothers Bag Co., here in Boston, has a word to say about the loss of our Assistant Secretary, Bill Drummey: "I think it would be a misfortune not to mention the appreciation of the splendid service Bill Drummey rendered the class as Assistant Secretary. The class, I know, is deeply appreciative of his efforts and regrets exceedingly that his personal affairs require him to relinquish his active interest in the administration of the class affairs. We are going to miss Bill Drummey, but when, and if, we get stuck we think we know where to go to find one willing worker in 1916 who knows how to do his bit and do it well."

Willard R. Crandall, formerly with the Southern Cotton Oil Co., at Savannah, is now located as Research Chemist for the Best Foods, Inc., at Bayonne, New Jersey. He has sent in several corrections of the directory which will help to get in touch with men, who were listed as lost. Let's have some more of this kind of news from others; it will help for the next directory.

Bailey Townshend, formerly instructor at M. I. T. and now at Yale, has been kind enough to send us some interesting news: "I sympathize with you when you say that you have to prod the members of the class individually to make them divulge any information, and yet I probably wouldn't be writing if I hadn't been so goaded. I suppose it is because the majority of us feel we have been pursuing a more or less commonplace existence with no great inventions, magnificent jobs, nor stirring adventures to report, and are floored by the task of making news out of the material at hand.

"I fought the Great War three thousand miles or so from the firing line as meteorologist, and later pilot, at various home naval air stations. The balance of my time (it seems appalling when I count up what that amounts to) I have spent in the double rôle of instructor in physics and graduate student at M. I. T. Having been informed this last June that I had become a doctor of science I decided on a change of air and scenery and accepted an invitation to teach physics at Yale. It would be interesting to many to contrast things as I find them here with those we knew so well at M. I. T.; but I shall refrain, for the time being, at least, on the ground of insufficient evidence.

"Certain aspects of the problem of the production of Helium, — the progress in which has come under the limelight through the recent flights of the 'Shenandoah' — were farmed out to M. I. T., under the direction of Professor Keyes. I started research in this connection, but was lead during the two years of its development into a field rather remote from the actual

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### 1916 Continued

extraction and purification of the gas. The opportunity and facilities for research are, of course, the lure for most who take up the teaching of science. I have hopes of progress along this line in my new surroundings.

"I would be delighted if any sixteen-year-old visiting Yale were to drop in for a chat."

Arthur K. Wells, formerly with Charles Wallace Co., of Boston, is now located with Louis Bachrach, Inc., as Industrial Engineer, and writes: "Since leaving Tech in 1914, all my work has been along industrial engineering lines until business fell flat entirely in 1921. The very interesting work I was doing for a bond house was terminated at the end of a year by that house retiring from business and my career in public utilities, started this year, was nipped in the bud by reason of their being sold out, so I am back in the industrial work again."

There is widespread interest in the announcement made at a dinner party on Thursday evening, December 27, 1923, at the home of Mrs. Edward Francis Skahan in Belmont, of the engagement of her daughter, Miss Eleanor Purcell Skahan, to John James Hickey, Jr., also of Belmont. Miss Skahan was graduated from Trinity College in Washington, D. C., in 1922, and is well-known in the National Capitol. Mr. Hickey is a graduate of our class in the Sanitary Engineering Course.

As you will note, our news this month comes from nearly every part of the U. S. A. and not to be left out we have the following letter from Edward Weissback now located at Cincinnati, Ohio: "Have just received the very interesting directory of the Class of 1916, and while I am still enthusiastic over it, I thought I would tell you that the good work has been appreciated by those of us who are 'in the stix.'"

"I notice that the following have not been heard from: Melville H. Rood, still with Ault & Wiborg Co. I still see Rood occasionally at the local M. I. T. dinners. Spencer D. Hopkins is production engineer for the Pollak Steel Co., is married and has two sons, Phillip and Allen. I forgot to mention that Rood is married."

"My own name and description is now slightly in error. On September 29, 1923, Miss Agnes H. Bridge and I were married at the First Unitarian Church of Cincinnati. We are now living at 314 Westview Avenue, Lockland, Ohio. While we were in New York City on our wedding trip we met J. R. Freeman, Jr., coming out of the theatre one night. My congratulations to you on the completed directory."

Professor Robert E. Wilson, formerly of M. I. T., now research chemist for the Standard Oil Co. of Indiana, located in Chicago, has been kind enough to send your Secretary a check for four dollars, two years' dues. (How does that sound to you fellows who have not even thought of this year's dues? Better make note of this and get your check book out now before you forget it and we have to send you a summons.)

"Congratulations on the directory. You have me starred as having answered the questionnaire, though I have no recollection of the same. You can count on me as one of the two hundred in 1925 — plus Mrs. Wilson. We had a very fine time last month when Dennie visited us at the Engineers' Club."

"Work here going finely in every way. Research is certainly unbeatable as an interesting job. Have just returned from a two-week business trip in California. To quote our old favorite, it was 'horribly awfully tough' to be playing golf there on the day that it was sixteen below zero here in Chicago. Saw our old friends, Drs. Walker and Noyes of the Chemical Department. Both of them are now confirmed Californians."

"M. O. Shur is Research Chemist for the Brown Co. at Berlin, N. H., and is doing fine work according to all reports."

On the outside of the envelope Wilson writes: "On looking over the directory, there seems to be entirely too many Barkers in our class." Can Captain Joseph W. or Stanley T. help me solve the mystery?

In the *Providence Journal* of January 19, there is the annual report of the Morris Plan Co. of Rhode Island. It states that three new directors were elected, one being our good known friend, Hovey T. Freeman.

Another 1916 man married. On November 7, 1923, Miss Catherine E. Miley of Dorchester, Mass., popular kindergarten teacher, and William J. Barrett, II of South Boston, production engineer with the Metropolitan Life Insurance Co. of New York, were married. After a honeymoon to Miami and other Florida cities, Mr. and Mrs. Barrett will return to New York City where they are to live. Mr. Barrett was a first lieutenant in the army during the war.

Shatwell Ober, still connected with M. I. T., has sent in a few names of men omitted in the directory. They are as follows: W. G. Brown, Assistant Professor of Aeronautics at M. I. T.; E. F. Hanford, draftsman for the Bethlehem Shipbuilding Co., located at their Quincy plant, and Alexander Klemm, Professor of Aeronautics at the New York University. Ober also writes:



1916 Continued

"I note with regret that President Bill Farthing is among the missing."

Not only has our erstwhile friend, Bill Drummey, won fame in the architectural world. H. Rafael Lake is doing wonderful work out on the Pacific Coast. In the Fresno paper for December 29 we note that Lake is making great progress. Fresno's new hotel, The Californian, which is recognized as an architectural achievement of high order, was designed by Lake.

Lake was graduated from M. I. T. in our class. For two years thereafter he worked in the office of the Cass Gilbert Co., in New York, architects of the Woolworth Building.

During the war, Lake served in the Navy with the submarine chaser fleet, stationed in the Adriatic Sea. After the war, Lake had the opportunity to continue his studies of architecture in Italy, France and Austria. He made an especial study of the Italian Renaissance type of architecture which, with modern adaptations, has been used to make The Californian one of the most magnificent hotels in the West. Many ideas obtained by Lake in his European travels have been incorporated into The Californian. Lake has practiced architecture in California during the last two years.

The following news I know will be interesting to all our class and also to some of the others, especially 1917, as it comes from I. B. McDaniels, who is located way out in the northwest corner of the U. S. at the navy yard in Bremerton, Washington. Mac writes as follows: "Have just received the '16 directory and first let me congratulate you upon it and the great amount of time it must have taken you to get it together. I guess you will be more interested in the enclosed check of \$2.00, however. I sincerely hope that the class came through. Why, dog-gone-it, the directory alone is worth ten times that amount and if you get stuck, I will gladly go in for some extra shares. Just because you had the thankless job is no reason why you should have to advance your own personal money and let's all get together and see that there is a nice checking account in the bank to take care of the future needs of the class. If necessary, can't you accept dues in advance?" (We certainly can and will take all the cash you want to send us, for we will need a lot for the big time in 1925).

"I checked through the names in the directory and first off I saw how much interest the President of the class had in his questionnaire. I am sorry I can't give you much dope on the ones that haven't a star behind their name, but I don't see many Tech fellows out this way and it has been so long since I have seen a sixteenner that I doubt if I would be able to recognize him (or her). It does seem funny to me that the boys who were so active in class and activities don't care enough to keep you informed. How do Lev Lawrason, Bill Shakespear, Rafe Alfaro, Paul Duff, Carl Guething, Lucas, Don McRae, Art Munyon, Bill Odgen, Jimmy Tobey, Chick Wallis, our esteemed President, et al. get that way? I won't be able to get back for the reunion unless I am 'ordered' back unexpectedly but I will be there in spirit and will sure hate to miss it. Again, let me express my appreciation of the directory and here's hoping that we get some class spirit. I am behind you to the limit."

Don Webster has something to say to the men near enough the 'Stute to come to a class meeting, which may wake up a little interest here in Boston: "Regarding Boston luncheons or dinners, by all means we should collect about fifteen sympathetic spirits and establish a routine. We can very soon find out whether or not we have enough in common to continue."

"Here one of the fundamental weaknesses of Tech crops out. It is an undeniable fact that very few of us had enough experiences in common as students, to bank on such experiences

as common ground and cause for our meeting one another regularly as alumni. My own experience has been that I suffered a certain lack of good companionship at Tech, which I have been trying to overcome ever since by associating with people who had those advantages at other colleges. I may be wrong in this, but I think I am not, and I think only lapse of time if anything will bring the members of the class to the feeling that there is something worth perpetuating in those few experiences that we did have in common. If we can't find something attractive, you've got me as to the next move."

We have at last heard indirectly from Rusty White from the report that Paul P. Austin has just sent in: "You may be interested to know that the regular monthly meeting of Technology men was addressed for two successive meetings by '16-ers. In October, Rusty White told us of his experiences at Lompoc during the eclipse of the sun last September. He assisted Dr. Burton and Dr. James Worthington of Oxford University in taking some photographs of the eclipse. Incidentally, this was the only expedition except the one in southern Mexico that succeeded in getting any pictures. All others picked places where the sun was obscured by fog. Strangely enough, Rusty disclaims any responsibility for this phenomenal luck."

"At the November luncheon, Charles Gross, Assistant Professor of Marine Architecture at the University of California, told us all about the S.S. Leviathan and his experiences in crossing on her last summer. I will write you something about myself when I have something worthwhile to tell, which I hope will be soon."

Just a word to some of the men I have written to recently. If you will all follow the instructions given you in the directory and write to me I will have a good lot of news for you next month.

## 1917

RAYMOND S. STEVENS, *Secretary*, 30 Charles River Road, Cambridge, Mass.

A bowling match with 1918 preceded the Alumni Dinner in January. Delayed notices made them one man short and Ken Bell was placed on their team, by which means 1917 won. The match was hotly contested and enthusiasm was at a high pitch as the spectacular performance of A. P. Dunham and the consistent skill of L. H. Hills told the story. It is understood that Shorty Carr expects to challenge for a return engagement another year.

With thirty-five men, 1917 presumably outnumbered any other class at the dinner. Mere numbers mean nothing, but it was good to be assured of finding a few old cronies, whatever one's taste in cronies. We were prepared to enjoy the evening in spite of the speakers and Bill Eddy's dinner committee. It proved doubly enjoyable.

Dexter Tutein came up from Philadelphia, L. L. McGrady from Fall River, H. L. Miller drove from Springfield and Lobdell puffed over from the Dean's office. Lists without additional statistics are apt to be edited out of class notes, but we feel sure this has news value enough to dodge the blue pencil. Those present were Stanley S. Robertson, X-A, A. R. Brooks, XIV, L. H. Hills, XIV, E. M. Clark, X-A, R. H. Blanchard, X, A. E. Gilmour, II, A. J. Ferretti, II, Kenneth E. Bell, X, F. A. Stearns, II, H. L. Miller, VI, S. M. Lane, X, Harold F. Powers, II, C. C. Crowell, IV, E. D. Sewall, II, Dexter A. Tutein, X-A, Walter G. Whitman, X-A, Alden D. Nute, X, Philip E. Hulburd, IV-2, Dud Holden, XV-3, Samuel Siegel, X, Lawrence L. Clayton, XIV, Henry C. Clayton, XIV, Clifford E. Lansil, VI, Paul A. deMars, VI, A. Edward Tuttle, II, VI, Harrison P.

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#### *1917 Continued*

Eddy, Jr., XI, R. J. McLaughlin, XV-3, A. P. Dunham, II, George M. Lovejoy, Jr., II, Frederick Bernard, VII, L. L. McGrady, XV-3, L. E. Wyman, XI, H. E. Lobdell, IV-2, Ralph H. Sawyer, II, and Raymond S. Stevens, XV.

Using the method of such well-known preceptors as Epicurus, Longfellow and recently Schell, we have examined documents left by great men to find that which would remind us of the secret of success. We found one characteristic so universal as to be assumed an essential. Correspondence should begin with an apology for procrastination. This is true of so much of the 1917 correspondence that 1917 men must obviously be headed toward fame. There is little real reason, however, why old Piso Moody, for example, need consider seriously the brief period which has elapsed since the reunion. If most of us write in as often, these notes will be of sufficient bulk and detail. He says: "I have been intending to write ever since the class reunion, but have put it off from time to time. However, I received the last Technology Review today and I resolved to do it at once."

"At present, I am trying to do two things at the same time—helping my father-in-law in the lumber business and building oil pipe lines, chiefly in Wyoming. Two years ago I was engineer on a pipe line job in Wyoming, and while up there got hold of a pipe screwing machine which I lease to companies who are laying pipe lines. During the past summer and fall my machine laid nearly a hundred miles in Wyoming. As this work does not take all my time, I spend the rest in the lumber business. I also have a girl and a boy that help keep me busy."

"I haven't seen any '17 men for a couple of years, so if you know of any coming out this way, tell them to look me up. Do you ever see Howard Stewart? I haven't heard from him for some time. Give my best to Lobby and any of the other boys."

Lowell Cady wrote in from 1404 Candler Building, Atlanta, Ga.: "This letter has gone unwritten long enough."

"Since leaving the Service I have been trying to get a good start in 'outside.' So far, the work has been interesting, but not lucrative as one would want."

"I am working for a consulting engineer here in town and in the water works game with the usual odd jobs that are apt to be done by a consulting engineer."

"This last summer we undertook a good size job in preliminary investigation for development of the present water works system of Spartanburg, S. C. If what was recommended goes through, it will be a very interesting power as well as water works job. Incidentally, they had me out in the field doing the surveys and getting the necessary dope."

"About the only large size job I have done since leaving the Institute has been in getting married. Enough said. Oh, yes, I even found time to enjoy a few games of baseball, so my arm hasn't been inactive."

"I was hoping to locate some Tech men down here, but so far have not run across any. If you happen to know of any of our class here, just pass the good word, because Art Milles is about the only one I know of in this section. He surely can give you a lot of dope about wood alcohol. He is with the Eastman Kodak Company in Kingsport, Tenn."

"Right here is where I shift the burden. You of course remember Henderson, (G. W.) well, he is just back from Turkey and can be reached through Weston, Mass., or the Philadelphia Navy Yard. I'll bet he can tell some good ones."

Tom Meloy writes from the Southern Building at Washington, D. C., the Washington offices of Libby & Meloy, Industrial Counsel. Their New York offices are at 61 Broadway.

"I have been meaning to write something about my past history for the last two years, but every time I rise to the point of a letter, something has happened and I have had to wait until things settled themselves again."

"As you probably know, I went to China in 1921, and there engaged in activities which involved everything from advising the famous Christian General on how to build roads, to running a Chinese news agency. The only position which I held which could be clearly defined was that of assistant engineer to Dr. J. A. L. Waddell, who was the high technical adviser to the Chinese Railway Administration. With Dr. Waddell I had the pleasure of inspecting most of the railroads, which, however, are not many. I was also Secretary and Treasurer of the Association of Chinese and American Engineers."

"I came back from China in February, 1923, and have been for the last ten months serving the Bituminous Operators' Special Committee in the field, having inspected variously the coal mines of West Virginia, Pennsylvania and Colorado. I



1917 Continued

went to England for them during the summer, having a most enjoyable tour of Scotland, Wales and the Midlands, and also studying British coal mining methods and methods of wage contracts.

"The chief of the investigation for the coal operators was Mr. J. H. Libby, who studied his engineering in Germany and France, later taking post graduate work at Harvard. After the Coal Commission dissolved, we decided to continue our association, and have just recently formed a firm, of which the enclosed notice is explanatory. We are at present just completing the technical part of the annotation of the Coal Commission's report for the counsel. We are also making studies of the lumber industry, particularly the use of a base price list with a view to presenting this material for certain manufacturers by whom we have been retained, to assist them in their defense against the prosecution of the Department of Justice. In addition to this, we are doing certain work along appraisal lines, and I am continuing to represent Dr. Waddell in his bridge and railroad work.

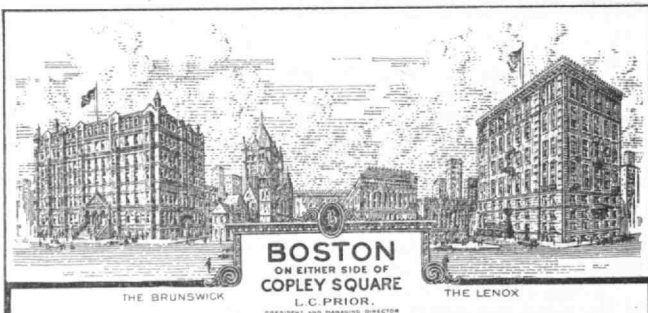
"Thus far I have met no Tech men in Washington, except Mr. David L. Wing, M. I. T., 1898, with whom we have been associated in the lumber case."

1918

P. W. CARR, Secretary, 400 Charles River Road,  
Cambridge, Mass.

There was a fine turnout of Eighteeners at the Alumni Dinner on January 5. Some twenty-one of us answered the roll-call. In the afternoon a bowling team representing the class competed for the mastery of the alleys in Walker Memorial against a team of Seventeeners. The latter emerged victorious, taking three out of four points. We who bowled swear it will never happen again—that is, the defeat.

As this group of notes is being sent in, plans are being laid for the first attempt of a monthly luncheon of the class. There is no reason why it should not be a success in the light of the enthusiasm manifested at the Alumni dinner. The date set tentatively and the location is the first Monday of each month at the Engineers' Club. This may be subject to change, but should anyone of the men not located around town wish to drop in for the luncheon, the date could be verified by 'phoning



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the Secretary or Ken Reid at the Institute. Cards will be sent to those men living around Boston just prior to each luncheon. If any man does not get one and wishes to attend, it is hoped that the omission will be charged to the correct cause, namely, a wrong address for that man in our files. He will be expected to attend despite the oversight.

The Secretary was greatly encouraged during the past month by receipt of communications from several of the brothers located in different localities. Notable among these was a letter dated January 7 from Jack Hanley, Andover, Mass., who writes as follows: "It surely seemed good to see some of the boys at the dinner on Saturday night. We don't see enough of each other." (Right.) "I was glad to hear that something is to be done about a regular meeting of the fellows around Boston a little oftener than once a year. Although I could not be present at a luncheon, I believe there are enough fellows working around Boston to make a monthly luncheon a success.

"I should like to see a yearly reunion instead of one every five years. My better two-thirds keeps asking me why we don't have such good times oftener.

"I am now inspecting for the Factory Mutuals along with Bob Grohe and Fred Washburn. Just at present, I am working in Lawrence, Mass., and living in Shawsheen. By the way, Bob Grohe was married a short time ago and is living in Wollaston. I don't know the young lady yet, but hope to. Also, I met Wint Caird in the South Station a few months ago. He stated he was married and also living in Wollaston.

"Fred Washburn is the proud father of three children. If you want Fred to register enthusiasm, ask him to show you the pictures of his family he carries in his wallet. You may remember Pete Harrall stating at the reunion banquet that he was going to New York to buy the ring. A short time after, we received announcement of his engagement, so I guess our Beau Brummel of Course I has at last decided to confine his attentions to one fair damsel. Phil Craighead was up at his home in Malden from New York over Christmas and with him was his fiancée from Pittsburgh. I am sorry to say that I did not meet the young lady, for in spite of frequent attempts, Phil and I could not seem to get together mostly on account of my being away from home most of the time.

"The above may sound like propaganda from the married men's club, but really is only my first attempt at trying to give you some news of the fellows.

"Shortly before Christmas we received an invitation to John Chase's wedding at Redlands, Cal., to a girl from that town. I have not the invitation with me just now and have forgotten the girl's name. As far as I know, John is still with the Santa Fe R.R., although when I last heard, he was on a leave of absence. I saw Hall Nichols on the train to Worcester last week and he tells me he is still with Aberthaw in Boston and is actually selling construction jobs for them. He told me that Al Heartlein had left Professor Swain at Harvard and was with a consulting engineer at New York. Phil Craighead is rooming at 315 Green Street, Brooklyn, N. Y. I dropped in at the Tech Club at New York and they told me that Art Hamilton was still living there and still selling steel and disposing of a lot of it.

"Well I must cease my scrawling for this time. Here's hoping that the class gets together a little oftener than once every five years."

The writer hopes that every member of the class that reads The Review will take a tip from the above and get the Jack Hanley spirit. Be aware that every letter received is answered by yours truly in his most serious vein. Each letter, too, is answered by an individual reply, and not on the multigraph. Let's have some more letters pronto.

The prize for long distance and prolific tendency goes to good old Walter Englebrecht, from whom the writer received two letters dated this month at the Daisy Belle Petroleum Co., Box 152, Wilson, Okla. In his first dated January 10, he writes: "Howdy, kid! Howdy! How's that for an Oklahoma native? I feel like I am one as I have been out here for four years in the oil business. At present, I am Superintendent of the above company's refinery. I have been here for the last two years and like the life and the climate just fine.

"Things are back to normal around here since the K. K. K. and the former governor, Jack Walton, have stopped fighting. Sure had a fine time for a while with martial law, no elections and everything. Fine bunch of politicians.

"I have not seen a Tech man since I left the East. I guess they don't like this section. I am still single, but then you never can tell what may happen in Leap Year. Be careful yourself.

"With best wishes and kind regards to the bunch—and give my regards to Bill Hall if you see him. I always did like those chemistry classes."

I had hardly dried my pen after answering the above and slipping in a request for a buck contribution to the class funds



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1918 Continued

when Walt crashed through with his second letter, enclosing the dollar above mentioned. He wrote as follows: "Your recent letter received and I'll say you're some Class Secretary when it comes to action. Regards Blanchfield, I don't know where he is. Last I heard he was with the Bell Telephone Company at Chicago."

"I am enclosing my check for one dollar as per request. Don't buy too much with it. Would like to have been at that bowling match you spoke of, but it is too far from home."

The following clipping from the Worcester *Telegram* dated January 11 has been received: "Miss Maybelle Felice Dann, formerly of Worcester, now of Los Angeles, was married yesterday in California to Fred Earl Pelton of Hollywood. Miss Dann, one of the Dann Trio, who formerly played at the Bancroft here, has a large number of friends in local musical circles. She has made numerous records for the Edison Company and recently made a trip across the continent playing her cornet numbers which have been recorded in the interests of the company."

"Mr. Pelton is a graduate of the U. S. Naval Academy, Class of 1914. Selected for the Construction Corps of the Navy in 1916, he took a post graduate course at the M. I. T. In 1919 he resigned from the service, where he had been naval constructor and entered the business world. As general manager of the United Studios at Hollywood, he has been successful during the past two years. The wedding trip will bring Mr. and Mrs. Pelton to New York, Worcester, and Boston. They will make their home in Los Angeles."

By the time this issue appears, the first attempt of a monthly class luncheon will be history. Watch the plan go over the top, and if you possibly can, watch it from the inside.

1920

KENNETH F. AKERS, *Secretary*, 54 Dwight St., Brookline, Mass.

¶ Bob Patterson, claiming he is sick and tired of my continual howl on the subject of poor correspondence, comes to the fore with a good letter. He is in Albany, as District Sales Manager for the Fireproof Products Company. He says he has "gone and got himself engaged while still young and ambitious" and expects to be married the first of the year. Bob writes that Ed Ryer is headed for Philadelphia as a budding young salesman for the General Electric Company. Harold Hunter is with Lockwood, Greene & Co. of Boston. Bob Patterson's only big

news of Norrie Abbott is that he still likes the women and is losing his hair. Bob wants to know if there's any connection, Norrie. We have heard it said one gets gray hairs over them, but losing them entirely is a new development.

Gerry Franck and Meyer Naigles are selling women's blouses and underwear. As Bob Patterson said, "One does not study 'Structures' for nothing!"

Skeetz Brown is still in Mexico along with Syner. Skeetz plays first base on the camp team and is batting around 500 at last reports. (This last not from Skeetz.) Saw Hugh Duffill in Boston the other day so he is among the living.—Jimmy Gibson still continues to sell real estate in grand style.

1921

RAYMOND A. ST. LAURENT, *Secretary*, 241 Central Ave.,  
Whiting, Ind.

CAROLE A. CLARKE, *Assistant Secretary*, 55 Tieman Place,  
New York, N. Y.

We'll not waste any space this issue throwing t. w. k. b., but confine ourselves to notes. Keep those Info Sheets coming — you who haven't, Do It Now.

Carl A. Ellis, I, is engineer for The Pitometer Company of New York, engaged on a water waste survey of Columbus, Ohio. Carl's address is Water Works Shop, 60 South Front Street, Columbus, Ohio.

Eldridge B. George, X, 605 Y. M. C. A., Worcester, Mass., writes that as assistant metallurgical chemist in analytical control work for the Arcade Malleable Iron Company in Worcester, he is fully preoccupied.

Paul S. Hansen, II, briefly states that it's the "same old grind — eat, work, sleep and a little recreation. Always broke."

G. (Whit) Spaulding, VI, 432 North Clay Avenue, Kirkwood, Missouri, is Assistant Distribution Engineer with the Union Electric Light & Power Co. of St. Louis. Whit's work is very interesting, consisting of "general flunkie" on underground systems locating faults and hot spots, checking electrolysis conditions and keeping records of temperatures and loads. Whit's engagement to a local girl, Miss Elizabeth Jewell Moore, is also announced.

Here is a happy line from John T. Rule: "Just attended a meeting of the Technology Club at St. Louis, where we had a grand blowout. Lyall Stuart, J. W. Barriger, Baumann and

1921 Continued

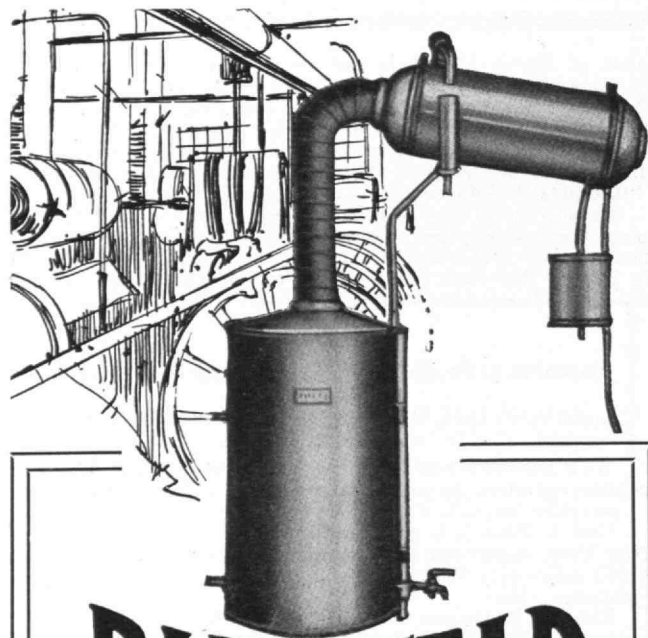
myself represented 1921. H. C. Destaeble has set himself up in an office with an authoress and a female short-story writer as an engineer giving expert legal testimony! Personally, I plow along in the same old way advising all good classmates to get married."

Willard A. Emery, II, Worthington Pump & Machinery Corp., 2424 Enterprise Street, Los Angeles, Calif., is Service Engineer on a locomotive feed water heater for the above company. For local color he writes, "Pink elephants, green snakes and red frogs gotten across the border. The last time I went to El Paso and crossed the border to Juarez I thought you boys might be thirsty so I had another drink for you." That sure was mighty considerate.

In answering the six questions on the Info Sheet, here's one with a real system: "1. Charles H. T. O'Donnell. 2. II. 3. Lowell Gas Light Co., Lowell, Mass. 4. Designer—that is working up layouts for new apparatus and the repairing of that already in use. Work embodies machine drafting, structural drafting, thermo-dynamics, etc. The plant is quite up-to-date in its manufacture of coal gas and carburetted water gas and the reclaiming of the various by-products. The work has many different phases and for that reason I find it very interesting. 5. Local Color? Not quite clear, but I prefer Baby Blue. 6. Smoke? Camels. 7. Drink? Grapevine. 8. Own and operate one 1915 Ford Roadster. This in itself constitutes a great engineering feat. 9. Love and Kisses."

Albert M. Young, V, c/o Fleishman Laboratories, 158th Street and Mott Avenue, New York City, is employed as a sugar chemist—sweet job—but Al says his own work is somewhat less interesting than that of the laboratory as a whole. He also says, "Some of our people are chasing enzymes and vitamins in yeast with great success. Eat yeast for health."

Edward W. Noyes, Course III miner, Sullivan Machinery Co., 122 South Michigan Avenue, Chicago, Ill., writes: "Sales Engineer for water works, mines, etc. Home address: 3552 Dupont Avenue South, Minneapolis, Minnesota. Have been with the above company travelling since graduation and like the work fine. Am transferring to new territory in 1924 and will be located in Milwaukee."



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BOSTON 30, MASS.

"I run into '21-ers every now and then, but not nearly as often as I would like. It seems like pulling teeth to get Tech men any farther West than Chicago."

"Russ Johnson was married this past June and is now located in Chihuahua, Mexico, with the A. S. & R. in mining work.—Old Eric, the Red, has left Mexico and is now in Chile in copper mining.—Bob Frost is still with the Bethlehem Steel at Bethlehem, Pennsylvania.—Just received an announcement of the marriage of El Peabody to Kathryn Wood. El is working with Stone & Webster in Haverhill, Mass.—Ollie Mills is still in Mexico.—Watts Humphreys is with the M. A. Hanna Co., and is located at Hibbing, Minnesota. Watts has been travelling all over the universe since graduation, but is at last back to civilization.—Frank Woodworth, X, was in Minneapolis this summer, but left for Los Angeles a few weeks ago as our climate is too severe." For those who didn't hear, Ed was married on June 4, 1923.

James L. Entwistle, VI, 825 East End Avenue, Wilkesburg, Pa., other than being a proud father of James Lovell, Jr., born July 29, 1923, is in the Railway Equipment Engineering Department of Westinghouse Electric & Manufacturing Company at East Pittsburgh, and his work is on the design, construction and testing of new locomotives for the Norfolk & Western and Virginian Railways. Jim writes: "Don Hathaway is with our Retail and Supply Engineering Department. Mrs. Entwistle and I extend hearty invitations to all '21-ers visiting Pittsburgh to stop at our place."

Ted Spitz, I, from 192 Fuller Street, Brookline, hurriedly signed a check and called the job done. Not so, Ted, we want to hear about the job.

Lewis S. Edgerton, XV, is an Instructor in Mechanical Engineering at Mechanics Institute, Rochester, N. Y. For local color, Lewis says that the Rochester Club is alive.

George S. Piroosinoff, II, 7110 Lawnview Avenue, Cleveland, Ohio, writes: "Am connected with the White Motor Company of Cleveland and the nature of the work is mainly design, consulting and research."

"F. Kinde, E. Sanborn, H. L. Williams, all 1923 Course II men, are taking an apprentice course with the White Company and are doing very well. H. R. Hatch, II, connected with Otis Steel Company of Cleveland, enjoys his work and will probably stick to the steel business. Larry Burnham, II, is in Akron working with the Firestone Company and doing very well. Phil Welles, II, was also in Akron with the Goodyear Company, but a few months ago he went East to Boston, I believe, and I have not heard from him since. Charlie MacKinnon, II, is an Instructor at the Case School of Applied Science of Cleveland. He teaches thermodynamics to juniors and seniors and believe me he had his hands full explaining to all the boys the intricacies of the T- $\Phi$  plane diagrams. F. E. Raymond, II, is works manager of the Crosby Steam Gauge & Valve Co. of Boston and handles his duties most successfully. Sidney Marine is in New York in the stone business with his father and is as happy and wet as ever and carries the usual assortment of stories to dilute his business conversations here and there."

"When I learn the definite whereabouts of other 1921 men I will be only too glad to send you additional information."

If more fellows would come through in this splendid fashion it would help a lot—so Do It Now!

Donald G. Morse, X, is still located with Kraeuter & Co., Newark, N. J., doing a little of everything from research and development work in the manufacture of golf clubs to accounting, all of which is included in "Assistant to the President."

O. O. Buckner, VI-A, is a salesman for the American Trona Corp., 233 Broadway, New York, N. Y.

Albert Genaske, I, Box 265, Wilmington, Vt., from the job in the field, sends us the following line: "Please forget the typewriter. Those exist only in civilization. This is my second year with the Power Construction Company. We have practically completed the eight miles of relocation for the H. T. & W. R. R. If any men taking Railroad Engineering at the 'Stute are interested in typical shortline mountain roads, they should give our line the once-over. We have everything from switchbacks, three per cent grades, twenty degree curves and so forth that one rarely hears about. The Whitingham dam is nearly completed, and we are about to make way for a new project lower down on the Deerfield River. The work is great and the Vermont air is surely healthful. We have the one and original gasoline train here. It is an innovation, to be sure, but for the boosters of such transportation in a northern state, I can only say, come on up and try it for yourself. I have not run across any 1921 men up here. I did meet Wason, 1920, at a concert in Williamstown last fall. He was working with the Aberthaw people on some new dormitories there. Whenever I go back to Newton on short vacations I manage to get hold of Maconi, 1922, the true founder of the old T. A. C. I believe that he is now working on a directory for the State of Connecticut. He is there when it comes to managing the ladies. Please send my mail to Box 265,

1921 Continued

Wilmington, Vermont. I expect to be here for another year at least. It is a real country town, with a population of about 1500. Just large enough so that one finds plenty to do when not working. Now I'll just give a few words about little me. I'm still a runt—weight about 132, and am chief of party in the railroad engineering force. I am quite adept on falling down with snowshoes, and am sure to pick out all the rocks when I'm entrusted with an axe. Nobody dares to hold a drill for me to hammer. And I can light a fire in a blizzard without a can of kerosene. So I'm improving. Rather than tell you just what the nature of our job is, I'm enclosing a newspaper clipping which gives a rather picturesque, if not quite true, account of the big job. This is enough for one time I guess. I hope you may be able to get some sense out of what I've written. You'll be the first to do so."

C. A. Breed, X-A, 445 Newtonville Avenue, Newtonville, Mass., is working for the Hood Rubber Company of Watertown, spending most of his time on development work on vulcanization and is responsible for upkeep and operation of present plant equipment. Al writes: "I spend some time in the boiler plant doping out future changes to be made. Harold Stose, X-A, is working here spending most of his time distilling some of the darndest smelling junk that ever junked. I guess you'd call it development or research work on resins, pitches, etc."

Here's what Harold F. Stose, XIV, says about it. Harold is in the Chemical Laboratory of the Hood Rubber Company, Watertown, Mass., doing chemical engineering research and development. Stosie writes: "My present work is broad and interesting and the Hood Company is the best in the United States. Am working with Bill Leach, X, and see Al Breed, X-A, Josh Crosby, X, John Matson, VI, often. Ran across Bob Crawford, XIV, in Washington, D. C., at Christmas. He is now western manager for W. L. Fleisher Company, engineers, whose headquarters are 530 South Clinton Street, Chicago, Ill."

A note from Herman B. Thompson, I, c/o Woods Brothers Construction Company, 130 South 13th Street, Lincoln, Nebraska, says: "I am in the employ of Woods Brothers Construction Company, acting in the capacity of Superintendent, and doing construction work. I have been with this firm since last summer, on river protection work, building standard current retards, in the Missouri River. I just completed a job south of Omaha, Nebraska. We use the Bignol concrete piling for anchors, constructing the retards of trees, which are tied together with cable and anchored to the piling. This method of river bank protection has proved very satisfactory, and is real interesting work."

"Am very sorry that I cannot furnish you with any info regarding other 1921 men, for in fact Tech men are very scarce in this section of the country."

Victor C. Hassold, II, Steel Heddle Mfg. Co., Philadelphia, Pa., writes: "After working a year in overalls learning Italian, Polish and Hungarian from company laborers, I have at last been made Superintendent. My address will change to 7437 Germantown Avenue, Mt. Airy, Philadelphia, Pa., having taken unto myself a wife."

Thomas F. Hickey is with the Frick Company, Waynesboro, Pa.—Hurley G. Griffith, X, 2704 Gold Street, El Paso, Texas, is with the Mexican Smelting Department of the American Smelting and Refining Company at present located in Chihuahua, Mexico. Griff was married on August 9, 1922.

Joseph C. Morrell, II, 165 Broadway, New York City, is in the Automobile Division of the Westinghouse Air Brake Company, developing, installing, servicing and marketing the air brake for motor vehicles. Buddy says: "The work is very interesting and promises great success, especially for truck, trailer and buss work. S. E. Moreton, Jr., was married on November 21, 1923, to Eda Williams at Lexington, Mississippi. Saw Dan Coogan on December 28 at Hartford, Conn. He is still Superintendent of Balfs' Quarry in that town."

George Gokey, XV-2, is doing Statistical Sales Service for Dodge Brothers, Detroit, Mich.—From Robert R. Whitehouse, XIV, 195 Broadway, New York City, comes an interesting note: "I am still holding down practically the same job in the Engineering Department of the Western Union Telegraph Company that I started out on in 1921, although the work has undergone considerable development in the meantime. For the most part they keep me busy in connection with inductive disturbances in telegraph circuits from paralleling power transmission systems. During most of the time I am in New York, although at times the work takes me outside quite a bit. Last year I spent a little time down South and in the Middle West, and these trips are always welcome because they offer somewhat of a diversion from the usual line of work."

"I see very little of '21 lately. Clyde Norton and Bob Crawford used to show up once in a while. Clyde must be keeping close to the Radio Corporation, or elsewhere, as I haven't seen him for some time. Bob moved uptown a year ago and



## Good Friends- from now on

**T**HERE'S good news at the plant. The production engineer and the chief inspector have buried the hatchet—their feud is ended—and all because of Ground-Form Cutters.

For months Jones, the engineer, thought that Big Mac, the chief inspector, was rejecting gears in order to give production a black eye.

"They're good gears, Mac," protested Jones. "What's the matter with them?"

Sure they're good, if you take them one by one," replied Mac, "but in big lots they're not uniform enough to pass inspection."

And so the war began; Mac grew more careful, and Jones felt sure that Mac had a personal grudge against him.

Then Jones discovered Brown & Sharpe Ground-Form Gear Cutters. He heard that they would increase production and at the same time improve the quality of his gears. He tried a few. Now, all his gear cutting machines are equipped with Ground-Form Gear Cutters.

Mac and Jones are good friends now. Gears come through faster than ever and rejections are few and far between.

Here is the booklet that proved so valuable to Jones. You can avoid his difficulties by getting acquainted with Ground-Form Cutters at once. Write today for your copy of this instructive booklet.



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MACHINISTS' TOOLS



1921 Continued

we haven't seen much of each other since then either. Stose wrote several weeks ago that he is still in Cambridge, and Vallarta just recently wrote that he had accepted a position with the Research Division of the Institute. The class notes don't seem to register much about XIV and I would like to see more in The Review as to their whereabouts. If any of the gang should have occasion to be in town, I would be mighty glad to see them, and can be located most any business day at 195 Broadway, New York, N. Y."

At the home of Mr. and Mrs. Munroe C. Hawes, X, the stork prompted the issue of a Babygram dated December 30, 1923, saying that a six-pound bouncing and good-looking girl had arrived and her name is Aimee Louise.

H. E. McKinstry, XII, is a Mining Geologist with the Cerro de Pasco Copper Corp., Casapalca, Peru.—George W. Pollock, XV-2, is in sales work with the F. L. Smith Co., 1125 32nd Street, Milwaukee, Wis. George writes, "Have seen Bradley P. Williams, XV-2, several times. He lives in Evanston, Ill., and is the father of a baby girl, born in September. I am to be married the 26th of January to Miss Janet Edmond Lindsay of Milwaukee, a graduate of Vassar and University of Wisconsin."

C. A. Newton, II, Cheney Brothers, South Manchester, Conn., writes: "Am still connected with the Time Study end of the silk business—and our business just at present is good. While at a summer resort bumped into Jack Crowley who is now married and living in New Haven. Just at this point my son in the next room is giving a Tech cheer—more nearly classed as a yell."

Edgar S. Russell, II, Stone & Webster, 147 Milk Street, Boston, Mass., is engaged in power plant design.—Bob Worsen-croft is teaching at the University of Wisconsin and Whit Avery is still in New York City with the Holmes Electrical Protection Company.

Elliott G. Peabody, II, c/o Stone & Webster, Inc., Fall River, Mass., was some time ago married to Miss Kathryn S. Wood. For a whole month the big event was a secret and those expecting and preparing for a wedding were doomed to disappointment.

Just to put us straight, Weston Hadden, 1716 Albemarle Road, Brooklyn, N. Y., writes: "How can I do justice to myself when others know more about myself than I do—at least a number of people think so. Yes, they have had me engaged half a dozen times and one had it that I was a widower. I have steered away from the rocky coast of matrimony with more or

less success and will continue to pursue the same course for quite a time, at least, until my pockets have more of a bulge. No, I'm not talking of 'Chapel' or The Woodcock.

"Work—that mystic word. Ah, yes, that is done between the hours of 9:30 to 11:30 and 2:00 to 4:30. It consists of stretching a telephone cable built for 303 circuits, so that it is working at 125% of rated. They call it toll engineering. But I am not the collector of the tolls. In the 'non-working' hours my occupation usually consists of putting negative resistance in somebody's arid circuit."

Walter J. Hamburger, II, American Storage Battery Co., 326 Newbury Street, Boston, Mass., fell so much in love with the "Info Sheet" that he would like one several pages in length—Oh, yes! Wal just recently (last July) settled in Boston permanently with the American Storage Battery Company. He says: "Wish some of you birds would drop in and see me when convenient."

Henry R. Kurth, VI, 126 Columbia Street, Cambridge, Mass., is laboratory electrical engineer with the Edison Electric Illuminating Co., of Boston. Local color is "dark brown." He states that he has not kept in touch with his classmates, having time for neither sleep, food nor recreation.

Chick also takes "two tablespoonfuls of water a day after meals."

Pierre F. Beaudry, II, M. S. M. E., is chief engineer with the Rolland Paper Co., Ltd., Mont-Rolland, P. Q. He writes: "I am buried in the neck of the woods and the heart of the mountains fifty miles north of Montreal, in a most picturesque country, but a very small village. Pretty quiet, believe me, at this time of the year. Local Attractions: good hunting and fishing and two beer retailers. A real paradise for the man who likes to camp out, etc., to ramble around with a motorcycle and a camping outfit to the out-of-the-way places. It's great. As to the work, very interesting and varied, a lot outdoors."

Larcom Randall, VI, will start in as a salesman for the Atlantic Printing Co., 201 South Street, Boston. This is not such a leap from electrical engineering as it may appear, for Mr. Randall has been associated with the printing industry since babyhood.

Bruce F. Rogers, X, U. S. Finishing Co., Norwich, Conn., does bleaching, dyeing, printing and finishing of cotton fabrics with the above company. At present, Rogers is in the office, but expects to be transferred to the plant any time.

He gives the following news:

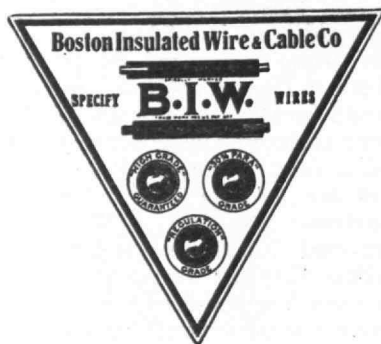
"Phil Haebler, '20, was here last week. He is with Garfield Aniline Co., dyestuff manufacturers.—Charles Tirrell, '22, is with the State Highway Department, working here in eastern Connecticut. Understand that Dan Harney, III, is back from Chile and is now working in South Norwalk.—Ed Clark, II, is with the Parkinson Mfg. Co. in Providence. In case you didn't know, he was married about a year ago to Miss Clover Converse of Stafford Springs.—Arthur Collins was married in Providence about a year ago to Miss Edith Willard. He is working for The Queen Dyeing Co. in the same town."

John W. Shepard, XV, General Specialty Co., 61 Carroll Street, Buffalo, N. Y., says: "The specialty manufactured is boiler tube cleaners. My job is to help sell more of them and at the same time to keep the line up to date. Sometimes I sign myself Sales Manager and the rest of the time Chief Engineer, neither of which means very much.

"Buffalo is a city of local color somewhat blended by virtue of the fact that the city is full of varnish remover. Which reminds me of a cartoon of a bootlegger telling his chauffeur not to pour moonshine into the radiator of his machine in lieu of the standard anti-freezing mixture for fear it would eat the radiator off. But if you have any desire to move to Buffalo, come along nevertheless, I've only had one headache so far, and that, I think, was caused by something I ate. I might even propose having the next class reunion in Buffalo."

John M. Sherman, X, Harvard Business School, writes: "Since 1921 I have held jobs in four different lines, first with a government bureau, second with consulting engineers, and lastly with manufacturing industries. In September of this year I entered the Harvard Business School. There are several Tech men here, but I don't know any other '21 men in the first year class. Carl Thomas, II, is a second year man.

"They have the courses here worked down to science as much as at Tech. First year subjects as arranged are required for all regular students, with no options. In the second year there is a division into groups which are more or less specialized. But even here, there is little choice beyond determination of the group. "I like the work very much and find it extremely interesting. Business problems involve much more of the human element than engineering studies, and this gives them an appeal which technical studies lack. The deficiencies of one are made up for by what the other furnishes. The combination is to my mind almost ideal.



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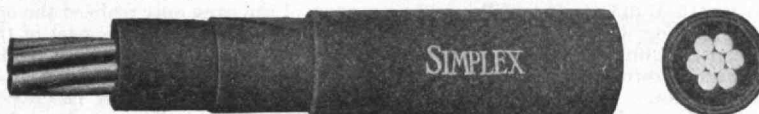
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1921 Continued

"The courses as presented are on a par with what is required at Tech. They give us about enough work to keep us busy for twenty-four hours a day, if we went into every phase in detail.

"Although mid-years haven't arrived yet, I believe they are about as stringent in culling out those who fall by the wayside as at Tech, and I expect to see the scythe used vigorously when that time arrives. I think you will appreciate the advantage that a Tech man has over those who have not had experience of dodging faculty votes.

"The Harvard Business School is about the most representative graduate school in the country. Last year there were one hundred fifty-eight different colleges, forty-three states and nine foreign countries represented. Harvard graduates do not make up much more than one-sixth of the total enrollment."

George E. Shoemaker, Jr., VI, Frank H. Stewart Electric Co., 37 North 7th Street, Philadelphia, Pa., writes: "Philadelphia hasn't much though the hourly murders and hold-ups on our main streets give a dash to life that Boston never had. I am a pretty good dodger and have not been winged yet by the strong-armers, and only arrested twice by cops looking for 'em.

"Harry Field and his attractive wife have moved here for a few months' stay.

"Charlie Williams, Kidder, and Royal Wood are still taking money off the Philadelphia Electric, the first seeming to bluff them very effectively."

Roy D. Snyder, XIV, 404 W. Hemlock Street, Hazleton, Pa., writes: "I am still in the same old job, in the same old place. R. B. Crawford, XIV, has had quite an advancement with the W. L. Fleisher Co. of New York City, having been transferred to their Chicago office and I think is in charge out there. They build air conditioning apparatus and Brace is getting to be quite an authority on that sort of thing."

Everett A. Soars writes: "I am afraid that I feel like an immigrant when I think of my connection with the Alumni Association." (Sec.—He is in America and glad to be here, but doesn't feel that he is an American.) "I am in the 1921 Division and glad to be there, but I don't feel entirely at home as I was in another class and was transferred to 1921 when I changed my course.

"I am enclosing my dues for I do not want to miss The

Review, for I look forward to scanning the notes to get information of my scattered friends.

"Since graduation I have been engaged in trying to put Math across to classes of the first and second year. I am now at Dean Academy, Franklin, Mass., and I'd certainly like to hear occasionally from some of my classmates.

"I became engaged this summer to Miss Josephine M. Crooker, Haddon Heights, New Jersey."

O. G. Wilson, Jr., X, Gulf Refining Co., Port Arthur, Texas, is in the Operating Department of the above company.

Richard P. Windisch, XV, has a clean bill of health on the "touching sheet," but where's the "info sheet"?

David O. Woodbury, VI-A, American Appliance Co., Kendall Square, Cambridge, Mass., writes: "My work is research engineering in a physics laboratory. My local color is pink in the morning ranging down to about gray-green at 5:00 p.m., other things being equal. My class is scattered to the ends of the earth, practically none of them having sense enough to stay in New England where the climate is good. I have just spent a year in California myself, so I know that what I say is so."

In answer to the question "how much water do you drink?" he said: "It is said Columbus pumped the Atlantic Ocean through his ship sixteen times on the way over from Spain. I do the same with the Boston Water Supply."

Mark L. Ireland, VI, Headquarters 79th Division, Schuylkill Arsenal, Philadelphia, Pa., received a Ph.D. on June 18, 1923, from the University of Michigan, specializing in Highway Engineering and Highway Transfer. He also received Distinguished Service Medal in May, 1923, for services as Chief, Repair Division, Office of the Director of the Motor Transport Corps., A. E. F., 1918."

John S. Cummings' engagement to Miss Olive Davis Bate-man of East Arlington, Mass., is announced.

Harold Lothrop Goodwin's engagement to Miss Martha Louise Dewey of Great Barrington, Mass., is also announced.

Our Executive Secretary, Dennie, '11, was in Chicago on December 20, and addressed eighty-four members of the Technology Club of Chicago. Among the '21-ers present were E. Russell Baldrige, 6441 Dante Avenue, Chicago, Irvin G. Betts, 6032 Stony Island Avenue, Chicago, Joseph H. Carr, 7639 Eastlake Terrace, Chicago, J. F. Culver, 930 Edgecomb

1921 Continued

Place, Chicago, George W. Farmer, 5815 Prairie Avenue, Chicago, Leonard R. Janes, 1212 Greenleaf Street, Chicago, George A. Kain, Jr., 625 West Jackson Blvd., Chicago, Goodman Mottelson, 1350 Jackson Blvd., Chicago, Miles M. Zoller, 208 S. La Salle Street, Chicago, R. R. Thurston, 1472 West 7th Street, Chicago, and R. A. St. Laurent, Boston.

A bulletin has recently been received, entitled, "Oil and Gas Royalties" from the office of William J. Sherry & Co., Inc., Kennedy Bldg., Tulsa, Oklahoma. Bill Sherry, X, is President and General Manager of this company, which is engaged in the purchase of producing royalties of property located in the Mid-Continent District.

Ormond W. Clark, XIV, 179 Spring Street, Medford, Mass., wrote some time ago that he had left the Pacific Mills, and was then chemist for Gates Finishing Company, Medford, which company has recently been reorganized and has a new President. The Gates Company never owned a chemist so that O. W. has no precedent to hamper him.

C. L. Bond, II, c/o Standard Oil Co. of New York, Colombo, Ceylon, was first with the Western Electric Company, before going with the above company, where he is now in the Indian Territory on the Marketing Staff.

John Drummond Bowman, VI, 347 West End Avenue, New York City, was for some time with the Central Maine Power Company, Waterville, Maine, engaged in all sorts of engineering, and is now Assistant Engineer in the Transmission and Distribution Department of the United Electric Light & Power Co., New York City.

H. H. Mosher, c/o R. A. Fife Corp., Mamaroneck, N. Y., after leaving the 'Stute, did staff work in the President's office at the Walworth Mfg. Co., Boston. He is now, however, General Manager of the R. A. Fife Corp., which handles technical and general school equipment and supplies.

Viviano L. Valdes, I, 121 Hidalgo, Monterrey, Mexico, after spending some time with the Mexican Government in the Fourth Zone of Irrigation, is now an independent consulting engineer, residing at Monterrey.

Donald B. Carter, XV, 31 Laurel Street, South Manchester, Conn., after spending some time as a student engineer making time and production control studies in the Manufacturing Department of the H. H. Franklin Mfg. Co. of Syracuse, New York, is now engaged with Cheney Brothers, South Manchester, Conn., making time studies in their dyehouse and paint shop.

Some of the men on whom definite information can not be given at this time, but whom we know are still alive, by the fact that Christmas cards were received from them, are Art Skilling, I, Seattle, Washington, who expects to be home in a couple of months, H. H. Spengler, X, Herbert A. Kaufman, X, from Carteret, N. J., Dan Harvey, III, Merrick, New York. (It appears that Dan is back from distant lands, and going to write us soon), Edwin R. Clark, X, Providence, Bill Smith, X, New Bedford, Francis Blewer, XV, Brooklyn, Willard G. Loesch, Richmond S. Clark, X, Houston, Texas, and Ace Rood, X, Cleveland.

E. W. Rudow, X, Arctic Club, Seattle, Wash., says that he is not married, engaged or anything else. He also says: "If some of the gang only realized the opportunities that are opening and will be opened in this part of the country, it's a dead cinch that we could have our class reunions here and not many of them would have to travel far."

Don Swift, X, United Electric Light & Power Co., Fisher Building, Cooper Square, New York, N. Y., is engaged in research on dielectrics with general and cable oils in particular. In reply to, "how much water do you drink?" Don says: "Why these foolish questions? Shall I forward you the address of my pet soda fountain?"

Oliver A. Mills, III, Cia Minera Acarco, S. A., Santa Barbara, Chihuahua, Mexico, took up point by point on the "info sheet" as follows: "Nature of work: hard-boiled millman. Local color: Don't know whether it's red or blue right now. For us and the company it may be blue, especially if the Revolution keeps up. At the same time, it may also be red. Things are happening rather fast around here these days, so that whatever I tell is apt to be stale by the time this reaches you. As yet, nothing serious, outside of the usual number of killings, has happened, and we all hope the trouble will stay in the South. If you asked me what I thought I couldn't say otherwise than the familiar Mexican expression, 'Quien sabe?'" Ollie asks: "What is this substance 'water'? It is something new or else undiscovered here in Mexico."

T. P. Campbell, XIV, 1024 Patterson Bldg., Denver, Colo., is doing metallurgical research, hydrometallurgy and electrochem. of zinc, including the general problems of complex sulfide ore treatment.

He says: "No other '21-ers in this neck of the woods that I know of. About the only one I ever hear from is Ken Moores, XIV, who is Head of the Research & Control Laboratory at the Illinois Zinc Co., Peru, Ill. Quite a few older Tech men out here, mostly connected in some way with mining. Have seen quite a bit of Frank Shephard, father of Dave Shephard, now in X, I believe.

"Business very slow out here. New prohibition squad has made the Benevolent Order take to cover until the new officials can decide what their price is going to be. Looks bad for the holiday season, although stocks on hand will carry over pretty well."

Richard W. Smith, XII, State Geological Survey, Nashville, Tenn., is Assistant Geologist. Answers "Local Color" query: "Those Southern girls."

J. Rowland Hotchkin, II, J. W. Sanders Co., 30 Church Street, New York, N. Y., is Treasurer of Sanders Co. and their sales engineer.

At the Alumni Banquet at Walker Memorial on January 5, 1921 was represented by E. W. Booth, IX-B, J. D. Crosby, X, W. E. Ferguson, E. W. Haywood, X, LeRoy M. Hersum, I, F. T. Hill, II, A. J. Johnson, XIV, A. J. Kiley, II, H. R. Knoth, VI, R. W. Leach, X, W. C. Luce, I, S. E. Lunden, IV, A. S. McLeod, XV, C. H. J. O'Donnell, II, L. C. Pelkus, X, A. E. Povah, II, J. M. Sherman, X, J. B. Smith, VI-A, H. F. Stose, X, G. Thomson, X, and G. T. Welch, XV.

## 1922

ERIC F. HODGINS, *General Secretary*, Room 3-205, M. I. T.

## Course I

J. F. HENNESSY, *Secretary*, 16 Henry St., Brookline, Mass.

Frank Howlett is now located in Boston after having worked in New York for some time. By the way, he has a younger brother at the 'Stute who bids fair to excel Frankie's record on the track team.

J. F. Pierce, whose marriage was reported in the January issue, writes from Roanoke, Virginia, that he is doing hydraulic investigations and also scouting up leaks. An article describing his work appeared in the December Water-Works Number of *Engineering and Contracting*.

From Medford comes the announcement of the engagement of Francis Sammett to Miss Elsie McPhee. Sammett is now senior engineering assistant in the Division of Highways for the State of Massachusetts.

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1922 Continued

Still another hits the trail. None other than Bill Daley, whose engagement to Miss Agnes Cooper, a Simmons College student, was recently announced at a dinner in the Copley-Plaza.

Jim Rooney is with the New Jersey Water Supply Commission at Newark, N. J. He might be seen occasionally in New York City with Mal Norton or Jack Sargent. His address is 12 Homestead Park, Newark, N. J.

John Vaupel is by now a completely settled benedict. He is living at 1930 Beacon Street, Brookline, at present, but the nature of his work with the Bethlehem Steel Company is such that he is uncertain just how long he will remain around Boston.

Among the Christmas mail was a card from Bill Rapp in Philadelphia.

#### Course IV

GEORGE S. HOLDERNESS, *Secretary*, 17 Gramercy Park,  
New York, N. Y.

Somewhere there is a well-known paper hanger who has been deprived of the use of one arm and in its stead possesses an aggravated case of hives, and who long has been the symbol of action and industry. Which is by way of introducing the fact that the date for this letter has caught us with our — well, we were unprepared, to say the least. By comparison with our present state of occupation, the aforementioned artificer is enjoying a protracted vacation. In other words, we have just naturally been so busy in the various pursuits to which draftsmen are given that we have collected very little information of our confrères, and have very little time in which to say that little. And, what is more, we are three days late with the letter, so it probably won't be printed, anyhow. For *The Technology Review* sticks rigidly to its requirement that all contributions be in its hands a twelve month prior to publication.

Beginning, as usual, in New York, there is, as usual, nothing to say. Two slight activities have developed recently, manifesting the desire of Course IV graduates in the city to enjoy closer communion, for the numerous benefits that might accrue thereto. In the first place, a luncheon rendezvous has been established in the roaring forties, where on Wednesdays, the elite of the New York draftsmen (meaning our crowd) gather to feast on good fellowship and a sixty-five cent luncheon, the former generally being the more satisfactory of the two. We would give the name of the place, but by the time this is published it will have changed several times, or perhaps been discontinued, so what's the use?

The other epoch-marking event in our metropolitan existence is the impending establishment of a Technology Atelier, where Course IV products who juggle fire-stairs and plumbing fixtures during the day may come for æsthetic refreshment during the evening. It seems to be a popular idea, and the presence of Mr. Emerson at the meetings where it was discussed, and his assurances of the Department's support have given great impetus to the movement. A location for the atelier is being sought and there is a decided leaning toward a loft floor which is just over a well-known Sixth Avenue restaurant where members of the Technology Club are won't to flaunt defiance in the face of prohibition. The favor which this site enjoys as a possible location for the atelier seems to be due to the influence of Messrs. Stearns and Carven, who apparently crave a place where not all of the refreshment will be æsthetic.

The only real facts available at this time, which are pertinent to 1922 of Course IV, are as follows. Norman Randlett has given up all thought of I-beams and why they were patterned after that particular letter instead of after any of the twenty-five others of the alphabet. It's back to Art for Randy! This estimable young man recently applied for a place on the City Planning Board of Boston, was accepted, and now he is busy helping to make the Hub a more beautiful city and a safer place for Democrats. But the first can't be, and the second couldn't be. This may sound a bit foggy, but it really isn't important, so just let it go.

Word comes that Chubby Heitschmidt finally coaxed his Dodge across the Rockies, and now writes Los Angeles at the head of his correspondence. He is with Schultz and Weaver, for whom he toiled while in New York, and is quoted as saying he likes Southern California better than Portland or New York because he hates raincoats and red flannels. So far, he has gained twenty pounds, and has not become involved in any Hollywood scandals, but there is plenty of time left.

Bob Albert, the well-known violin virtuoso, couldn't stand the mosquito pestilence in Jersey, and so moved down to Washington, where he is employed in the office of the Municipal Architect. He is reported to be very fond of his new surroundings, and to be an important cog in the machinery of his organization.

At Christmastime we received a card of greetings from Arthur Frappier, who, also, is no slouch on the catgut. Frap

## BETTER LIGHTING NEEDED IN INDUSTRIAL PLANTS.

In a paper read before the Illuminating Engineering Society, February, 1920, entitled, "A Survey of Industrial Lighting in Fifteen States," R. O. Eastman submitted some very interesting data regarding the lighting conditions in industrial institutions. The survey comprises some 446 institutions, in which lighting was considered by 55.4% as being vitally important, and by 31.6% as being moderately important, and by 13% as being of little importance. Practically 58% considered that lighting was as important as power in the operation of the plant, and a small proportion would give more attention to lighting than to anything else.

In considering the present condition of lighting as found in the various plants, only 9% ranked as excellent, about 1/3 ranked as good, 29% fair, 18.8% poor, 3.5% very poor, and 7.8% partly good and partly poor. It was found that the lighting in the offices was far superior to that in the shops; 19% being excellent, 36% good, 31% fair, and only 13% poor and none very poor.

On consulting the executives regarding what factors were most important in considering lighting, the following facts were revealed: Increase of production 79.4%, decrease of spoilage 71.1%, prevention of accidents 59.5%, improvement of good discipline 51.2%, and improvement of hygienic conditions 41.4%. Manufacturers who have good lighting appreciated its value largely from the standpoint of its stimulating effect upon output.

There is no question that any intelligent man who carefully considers the necessity for good lighting in an industrial plant, will agree that it is impossible for a person to do as good work, either in quality or quantity, in poor light as in good light, but yet the result of a careful analysis discloses the fact that only about 40% of industrial plants are furnishing good light to their workers and 60% are operating under poor lighting. It is hard to understand why such a proportion of concerns can be satisfied with a condition which is universally admitted to be a curtailer of efficiency and a prolific causer of accidents. The principal cause of this condition is that those in charge of such establishments have not given the attention to lighting that it demands. They do not know what constitutes good lighting, and in their absorbing interest of other factors of production have overlooked a vital one.

Every safety official should deeply interest himself in the lighting of his plant and insist upon good lighting as much as good goggles, good guards and other necessary accident prevention equipment. Every production manager should insist upon good lighting because the efficiency of the working force is increased by the condition of the lighting furnished. The plant physician should examine the lighting, for eye strain and eye fatigue are directly affected by poor lighting, as is the hygienic condition. Well lighted plants are invariably cleaner than poor lighted places. Plants equipped with Factrolite Glass in all windows are well lighted.

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## 1922 Continued

still is in Providence, and his card is addressed to the class. So, read 'em and weep, class!

Thus endeth the facts for the current attempt. And, according to tradition, you can't beat the facts. At least, they can be handled without a shovel. As soon as the intensity of our previously mentioned business undergoes a let-up we are going to write to all of the members of the class who are lost, strayed or stolen, and ask them "how come?" If they all answer promptly, and tell of everything which has happened since we last heard from them, the readers of The Review may look forward to a very fat number, with a lot of pregnant remarks.

We suspect now that we have said enough. So, cheerio, and we shall see you all at the big convention in June. And you simply must bring along the family, for New York will be such a treat for them if they have never been here before!

## Courses V and X

S. PARKER McCONNELL, *Secretary*, 187 1/2 Fairview Ave., Jersey City, N. J.

It did look for a while as though this issue of The Review was going to come out without any dope at all concerning Courses V and X. The zero hour for copy to be in was so near it was really uncomfortable, and nary a word had come to hand either from or of you. As Chemists and Chemical Engineers you are probably pretty hot, but as correspondents there are times when you plunge me into the deepest despair. I have been casting about for an explanation of this unhappy state of affairs. Can it be your innate modesty which is holding your trusty Watermans and Underwoods in check? If so, Friends, its quality is strained; moreover, in thus permitting it to find expression, it is a snare and a delusion. In fact, in hugging to your bosom the news of what you are doing and of what Fate is doing with you, you are really being selfish.

Let me elaborate just a little bit. For some reason or other, whether it be force of habit, morbid curiosity, or just a last resort in killing time, you are reading these notes concerning the activities of Courses V and X. They represent our modest effort to give to you collectively a sort of resumé of what we receive from you individually. And who can deny that to receive and not to give in return, is but a form of selfishness. Don't you agree with me, fellows? All right, kick through then and give me some news of yourselves. Here

is a suggestion for you. Will each one of you drop me a line, once every three months, and tell me what you are doing? What that letter contains may or may not always be news, but just send it on anyway. Surely, the demand that letter would make on your time would not be exorbitant, and if you are all faithful I promise you this column will then assume the size and importance it deserves as a compendium for Courses V and X, 1922.

And now for the notes. On Saturday, December 22, in Wilmington, Delaware, the engagement was announced of Ernie May to Miss Sophie du Pont, eldest daughter of Irenée du Pont, '97, President of E. I. du Pont de Nemours Company. Miss du Pont is a member of the Class of 1924, Vassar College. Ernie is still with the General Chemical Company at Marcus Hook, Pennsylvania, as technical assistant to the supervisor of the south plant. We congratulate you, Ernie, and wish you happiness.

At last we have succeeded in ascertaining the whereabouts of the "Big Boy" — we mean Lester B. Bridaham. When last heard of he had been wandering at large on the Boulevards of Paris. We knew that his ready sympathies would be aroused by our French brothers and sisters. We knew how deeply their manners and customs would appeal to his æsthetic soul. And for a while we despaired of losing him. But the fates were kind; he has returned and for those who want more direct contact, his address is 449 Sixth Street, Braddock, Pa. He is with the Edgar Thomson Plant of the Carnegie Steel Company. We have not heard from him directly, but we understand that at present he is devoting his time and energy to an intimate study of operating conditions of the Open Hearth.

Bill Haebler is still at the University of Zurich, Switzerland, where he expects to get his Doctor's Degree in Chemistry some time this summer. Bill was married before leaving and his wife is abroad with him. We feel a bit guilty in not having announced to you before this happy occasion in Bill's life. His wife was Miss Ethel Kurth of Milwaukee and a graduate of Wellesley in the Class of 1922. Our congratulations and good wishes, though belated, are none the less sincere.

## Course XI

F. J. LAVERTY, *Secretary*, 1400 East 53rd St., Chicago, Ill.

Dan Moynihan writes to say that he has accepted a position as assistant engineer on the construction of the new water filtration plant for Buffalo, N. Y. He also reports a visit to Boston during the early fall. Jim Stalbird admits the recent accusation that he is in New Jersey. He is chief analyst for Weston & Sampson on the Wanaque project.

The western section of the Far Famed Dirty Thirty held a reunion on October 13 at the Hotel Statler, St. Louis, Mo. Among those present were By Cychal, Bill Daley, Scotty Westcott, Bill Barrett and myself. Cy and Bill find highway work both uplifting and profitable. Cy calls Paris, Ill., his home town and claims he'll own the other half of the town if his luck doesn't change. Bill Daley is stationed at Breese, Ill., and claims there's more life there than in Roxbury. That's possible.

## Course XV

R. H. BROWN, *Secretary*, 75 Glen Road, Jamaica Plain, Mass.

I have five wedding announcements to make. Some of these should have appeared long ago. Please accept my apologies. All members of the class who haven't already done so will join now in congratulating the happy couples.

Mr. and Mrs. Leslie N. Littlehale announce the marriage of their daughter, Joyce Rebecca, to Mr. Jesse E. Jones, Jr., on Monday, August twenty-seventh, nineteen hundred and twenty-three, Rockland, Maine.

On September 10, Miss Charlotte Sanderson of Littleton, Mass., was married to Mr. Julian Lovejoy, the ceremony taking place on the wide lawns of the Sanderson estate. The bride, daughter of Judge George A. Sanderson, is a graduate of Walnut Hill School in Natick. The new home will be established in Cambridge.

At All Saints' Church, Brookline, on October 26, 1923, Miss Louise Maës Henderson, daughter of Mr. and Mrs. Franklin Charles Henderson, was married to Mr. Charles Wesley Manville. The bride attended the Gateway School in New Haven and graduated from Simmons College in 1922. Assisting at the wedding were several of Wes's classmates, including C. Ford Blanchard, '22, Harold A. Stockbridge, '22, and Chester Wyatt Greening, '22, best man. A reception at the home of the bride's parents was held after the church ceremony. Mr. and Mrs. Manville are to make their home at 1784 Washington Street, Newton, where, after December 1, they will welcome their friends.

There was an attractive southern home bridal in Richmond, Ky., on July 25, when Miss Elizabeth Parkes Burnam, a gradu-

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## 1922 Continued

ate of the New England Conservatory of Music, was married to William Watson Russell. The bride is the daughter of Mrs. Robert Rodes Burnam. Dale Spoor, '22, of Redlands, Calif., attended Bill as best man. The new home of the couple is 99 Ossipee Road, Somerville, Mass., where friends are welcome.

In October, Miss Geneva Claire Burr, daughter of Mr. and Mrs. Gerry Bert Burr of Bangor, Maine, was married to Mr. Leslie Benjamin Sanders of Newton Center, Mass. The bride attended Abbott Academy at Andover and was graduated at the Garland School in Boston last June. Their new home will be at 973 Centre Street, Newton Center.

I am sure you are all interested in the above, so don't fail to let us know when your own time comes. Many good letters have been received and some old faithfuls write regularly. In the near future I'm going to try to find out again where everyone is located and what you are doing. We can then have what may be called the annual round-up of our gang in these pages. Stand by, please, for two months.

## 1923

ROBERT E. HENDRIE, *Secretary*, Room 613, 50 Oliver St., Boston, Mass.

H. L. BOND, *Assistant Secretary*, M. I. T., Cambridge, Mass. Course II

HAROLD B. GRAY, *Secretary*, Vitreous Enameling Co., 6800 Grand Ave., Cleveland, Ohio

Fred Mann is settled for a while in the traffic department of the New England Telephone & Telegraph Co. in Boston.

H. O. Tappan was in the outside plant department of the same company but severed his connections with them about the middle of January. His whereabouts is now not known.

## Course IV

JAMES A. HENDERSON, *Secretary*, 322 North Lombard Ave., Oak Park, Ill.

The engagement of Hugh Perin to Miss Helen Frances Baxter of Brooklyn, N. Y., has been announced. Miss Baxter is a graduate of Wellesley College, Class of 1923, and is now studying at Tech with the senior architects. Hugh is also at the 'Stute, studying for his Master's Degree.

## Course VI

ALBERT J. PYLE, *Secretary*, Utah Power & Light Co., Grace, Idaho

The men who registered with the American Telephone & Telegraph Co. for all-around experience surely are getting it. Swinging picks and shovels out on the road with Pat and Mike, digging post holes and tugging to the tune of "Now, altogether boys"—such was the initiation. Some embryo engineers start on the ground floor; these started underground. Pulling cables through conduit lent variety to the routine.

After two months of rough-and-ready work, the hello boys got inside jobs, repairing and installing equipment. Perhaps two months more and they were considered primed for more studying. The four years at Tech was a mere beginning. The lab work consisted of taking the actual "number please" course, with instructors, rather than exasperated business men on the other ends. It is known now why the girls sometimes get frazzled ears and go on strike. A couple of months of engineering, and the ringdingers are ready to begin.

Among those taking the course in phonology and now in New York City are Rod Goetchins, Charlie Loud and Karl Swett. Charlie Mapes is in the R. & D. Department. We wanted to learn whether R. & D. meant ring and ding or rust and dust, and found it was research and development. Myron Chandler and Ray Willis have settled in the machine switching and traffic departments respectively of the New England Telephone & Telegraph Co. You know that Ray has given up being an artist or something else.

J. G. Chaffee is with the Research Department of the Western Electric Company.—Irwin Gerofski may be found inspecting for the Western Electric in Boston.—B. J. Stevens is with the Bell Telephone Co. of Pennsylvania.—Look in the Radio Department of the Boston Transcript and see J. K. Clapp as Editor, succeeding E. L. Bowles, who resigned. J. K. is also assisting Mr. Bowles at Tech.—R. V. Taylor and Bill Glendinning are assistants in the Dynamo Laboratory back at Tech.—Ben Albert has joined the Boston Edison Electric Co., and unable to withstand the prosperity has become engaged to a Revere girl.

The old gang that hung over that table, the fifth over and third down in Walker, will be awed to hear that Eddie Rue has gone the limit. That is, he went and got married. Eddie has not outgrown the Boston Edison yet.

Abe Goldberg, Bernie Falk, Frank Salus, M. Patisteas and Joe Fleischer have sacrificed themselves to Stone & Webster and,



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1923 Continued

as Joe writes, are drafting away to beat the infernal regions. They shouldn't make it too hot because summer's coming.

Bill Coughlin is working in a power station of the Boston L., but says he isn't responsible for the ten-cent fare.—Jimmie Sil is with Holtzer-Cabot. He hasn't said just what department, but we suspect it's where mathematics come in.—Joe Fleischer volunteered much of the above statistics. We wish other men would open up and keep the news-reel going.

Through some error it was announced that G. Walter Bricker is studying at the Howard Business School, when it was meant to state that he is at Harvard Business School. Brick resents being identified with Howard even if there is such a place. Seems that Fate had voted trouble for G. W., for trying to improve upon the best—a Tech education.

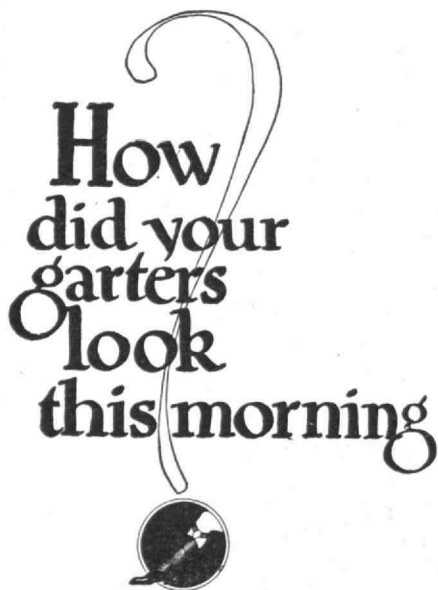
## Course VI-A

F. T. HAZELTINE, *Secretary*, M. I. T., Cambridge, Mass.

There has occurred, for once, something of interest to '23, VI-A, and perhaps, therefore, to M. I. T., '23. Another of those periodical shifts has come and the men are starting on a new kind of work for the term.

Of the men at the Works this term, C. J. Koch is working in the Induction Motor Department at Schenectady.—H. B. Rex is at Schenectady, playing with tubes.—G. I. Carper and Tommy Thompson are doing thesis work on motors at Lynn.—A. J. Hartwright and B. L. Zangwill are attempting to advance science in the Lynn Laboratory, 2nd 68.—F. T. Hazeltine is in the laboratory at Lynn, too, doing thesis work on aeronautical instruments.—R. H. Henderson is drafting at Lynn.—W. D. Norwood and Jerry Frank are struggling with unruly turbines, and R. P. Shaw is reported to be tending in the direction of the same job.—Bill Appleton is doing illuminating work, and H. H. Spencer declares that he is going to revolutionize the lighting system of the Works.—P. L. Wilkins has a white collar job at West Lynn, keeping the company's instruments in proper shape.—H. F. Crotty is on motor test in Building 74.—P. C. Smith, Freddy Travers, and P. B. Alger are at the Institute, and working as hard as could be expected,—and Phelps and Reeves are back with the Edison, keeping Boston lit up.

So—VI-A is all set for another term, when this section goes back to the Institute and makes a supreme effort, a last try, for that M.S.



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## Course XIV

FRANK M. GENTRY, *Secretary*, 428 Fayette Park, Lexington, Ky.

At this writing your Course Secretary finds himself passing through the Shenandoah Valley bound eastward by way of the Chesapeake and Ohio lines. Just three months ago he found himself with trunks, suitcases and other impediments packed to go to the Far East for three years, but the oil business went on the bum and he was all dressed up and nowhere to go. So again the question, *quo vadis?* If the flat wheels under this Pullman will permit legible writing he will try to recount the adventures of our gang.

Doc Smith is living at 312 Overlook Park Drive, Cleveland, and is with the Reliance Electric and Engineering Company, manufacturers of D. C. and A. C. motors, of that city. He gives an interesting account of his time as follows: "You have asked what I am doing, so here's the dope. I am with the above company and going through a factory sales course along with Chet Taylor, '23, and some other fellows from other universities and colleges. We have done every phase of the shop work from heaving castings around a boring mill to driving spikes in the shipping room, and now are hurrying our course to completion by Christmas. I have been allotted to join the Chicago territory, which takes in all of Wisconsin, Illinois, most of Indiana and western strip of Michigan, and shall proceed to Chicago about January first.

"The last of September I attended with the fellows the exposition of the Convention of Iron and Steel Electrical Engineers in Buffalo, in conjunction with our motor exhibit. There were several mighty interesting exhibits there, one in particular being that by several companies in coöperation. They had completely equipped a modern steel refining plant, with electric furnace, complete control apparatus, overhead electric crane moulds and foundry, and twice daily for a week went through the whole operation from beginning to end. The furnace was of the tree electrode type, each operated by its individual automatic motor. I wish our whole last year's XIV group could have taken in that exhibition.

"Cleveland is an active Technology town and I have enjoyed now and then taking the weekly luncheons. Recently I visited some of the Tech fellows at Akron. Am sorry I have not been in contact with Dave, but his plant is about as far west of the city as ours is east, and, believe me, Cleveland hasn't the commutation service and transportation that we were used to in Boston."

Doc has set us all an excellent example by attending the alumni meetings where he is located. Such things mean a greater future for our Alma Mater.

From the same Ohio town, Dave Joy paused long enough in his labors for the National Carbon Co. to add his history to the archives of our course: "You have heard before that Howard Cobb dropped in on me on his way out West. On starting out from Boston to take this job, who should I run into but Charlie Mongan and his father and mother on their way to California, where his father was a delegate to a medical convention. Charlie stayed out there all summer and met Dr. Knobel in his new quarters. On his way back he stopped off at Cleveland and tried to call on me at the plant. I happened to be doing special work at the pitch plant and did not get in touch with him. He called me by 'phone later and we had a chat.

"I survived the meeting of the American Electrochemical Society all right. Nobody was foolish enough to ask me any questions about the paper" (you'd better be glad none of us were there, Dave!) "so I got away with it all right. Dayton is a nice place. I know a girl down there and this made things interesting, etc."

Dave says that Briggs, '22, XIV, is doing some special work at Cleveland for the National Carbon Co. He is employed in the Research Laboratory at Freemont. Dave's address is 1556 Alameda Avenue, Lakewood, Ohio.

One Charles E. Snow, otherwise our own Charlie, is not through with track yet. He is going to run under the colors of the Newark A. C. this winter. Charlie is in the Research Laboratory of the Westinghouse Lamp Co. at Bloomfield, N. J. He is working under Dr. MacRae who is an old Tech grad. Jack Heck, '23, Godfrey Spier, '22, and Widell, '21, are also working there in the same laboratory.

Philosophically, Charlie remarks: "I learn more in this laboratory every day than I did in a day at school. I used to think it was tough to do things on my own hook in D. E. M. lab., but I have to rack my brain in this place." His address is 41 Watessing Avenue, Bloomfield, N. J.

Ed Smith writes that he met Bat Hausen's pal, Bill Noyes, '23, in a Russian restaurant on Thirty-seventh Street, Gotham, not long ago. According to Ed: "New York has Boston beat in forty ways for the ace exception of libraries." He has been making oscillograms of the applied voltage, current through

## 1923 Continued

and sound out-put from loud speakers with a view to eliminating low frequency distortion for the Radio Corporation of America. Ed's gone in for mathematical physics in the form of analyzing complex harmonics with Fourier's Series.

Dave Skinner blames himself as a "rotten correspondent" for not writing sooner, but here is what he sends from 49 Nottingham Road, Brighton, Mass.

"Now as to my history from graduation on. I'm afraid that The Review will be a distinct failure if they don't get all the important facts.

"I was in New York for a while and made arrangements with the Western Electric people to come with them about October. Then I got a job in Boston for the summer to keep me busy and start the 'shekels' rolling in—a good job, in an insurance office, trying to shake down the poor agents and get the money, a polite way of saying bill collector.

"Then this fall just as I was ready to go back to New York, Professor Thompson flew a distress signal. Whitman, '22, had left and school started and he was without help. So Little Davy to the rescue and I agreed to help him out. I was just glad to get the chance to stick around home for another year and I hope to taste a little graduate work which will help a lot.

"I run into Ned Frank quite a lot. He is assistant in the Electrical Laboratory, you know, and he is taking a couple of courses that I am. I also see Charlie Mongan, Cobb, Clapp and Gardner around the 'Stute. Gardner is going to do a thesis in the Furnace Laboratory so I'll see a lot of him. They don't have many of the old bull-sessions up around the table any more.

F. P. Montgomery, '02 Pres.

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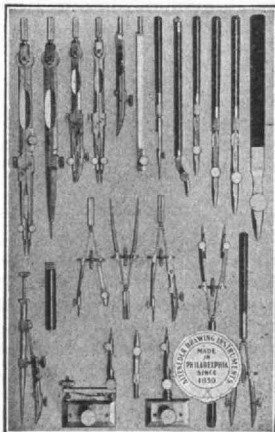
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The new gang doesn't seem to be built on those lines. Let me hear the news from all, etc."

Don Gardner says that as far he can see, most of '23, XIV, is still at the Institute. He says he sees Ed Roll and G. G. Kearful roaming around the corridors as of yore. Don is going to find out the relation between time, temperature, kind of slag, amount of titanium and amount of iron that remains in the slag in the production of ferro-titanium for a thesis! We wish you well, Don, but we are glad it is not to investigate the relation between the hibernation of grasshoppers and the conjunction of Orion and the solar parallax! He said he saw John Little the other day about the 'Stute. He stopped off for a sojourn on his way to Maine. John is an elusive chap and seems to have taken up globe-trotting as a pastime since der Tag.

**CHARLES H. JOHNSON**

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1923 Continued

Course XV

EDMUND H. MILLER, *Secretary*, 547 Lake Ave., Rochester, N. Y.

We are not quite sure what class Abbot Johnson is supposed to have his doings chronicled under. It was 1922 he belonged to at one time and he was in 1923 last year, but as he still hopes to graduate he may turn out to be 1924. However, he has been doing a regular laborer's work this past term at the Cambridge plant of the Ford Motor Company, and is now holding down the position of foreman.

Ray Brink, after trying refrigerator installing for a while, has turned to selling them, but is not entirely sure he will like that kind of work. He was asking the other day if we knew of any company that needed a president or general manager. He told us that Bob Hull was with some investment concern and was at present using Watertown, New York, as a base of operations. Brink also reported that he had seen George Barnes in the big city.

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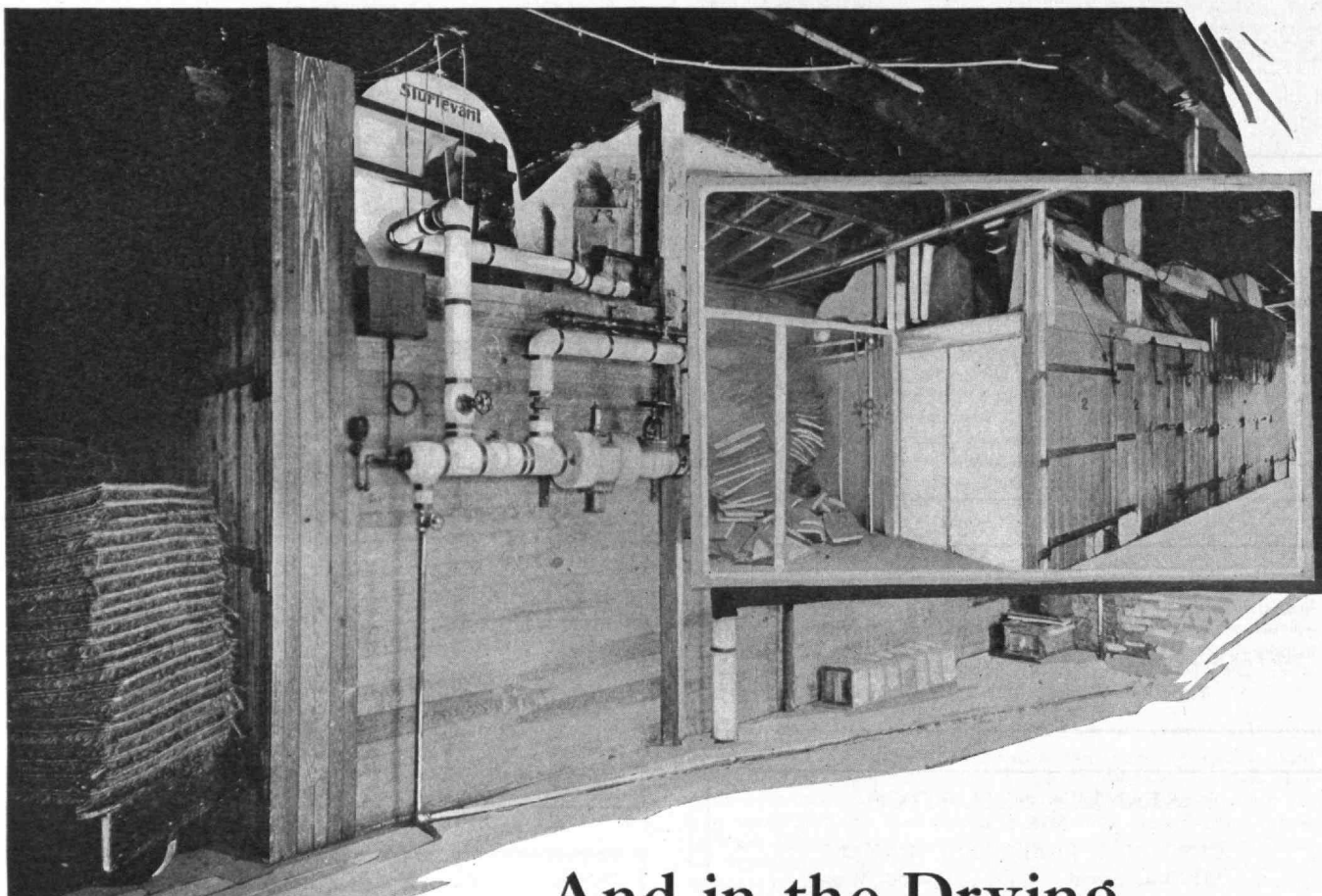
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Buhler is with the Engineering Department of the Edison Storage Battery Company, in Orange, New Jersey.—Roger Canby was last heard from in Dayton, Ohio.—Bernie Coleman was looking recently for a chance to land a position in St. Louis.

Fritz Clement, who was noted in undergraduate circles as a golfer, has been forced to make researches in the steamfitting field lately. He is with the American Radiator Company in their Chicago office as a sales engineer.—W. H. Donnelly, after finishing up his Institute work this last term, has gone to Rochester, N. Y.—Hugh Ferguson, who started last fall with Dewey and Almy Chemical Company in North Cambridge, is now their Office Manager.—Another of our 1922-1923-1924 men is Art Westcott, who is still around the Institute nursing hopes of getting through this June.



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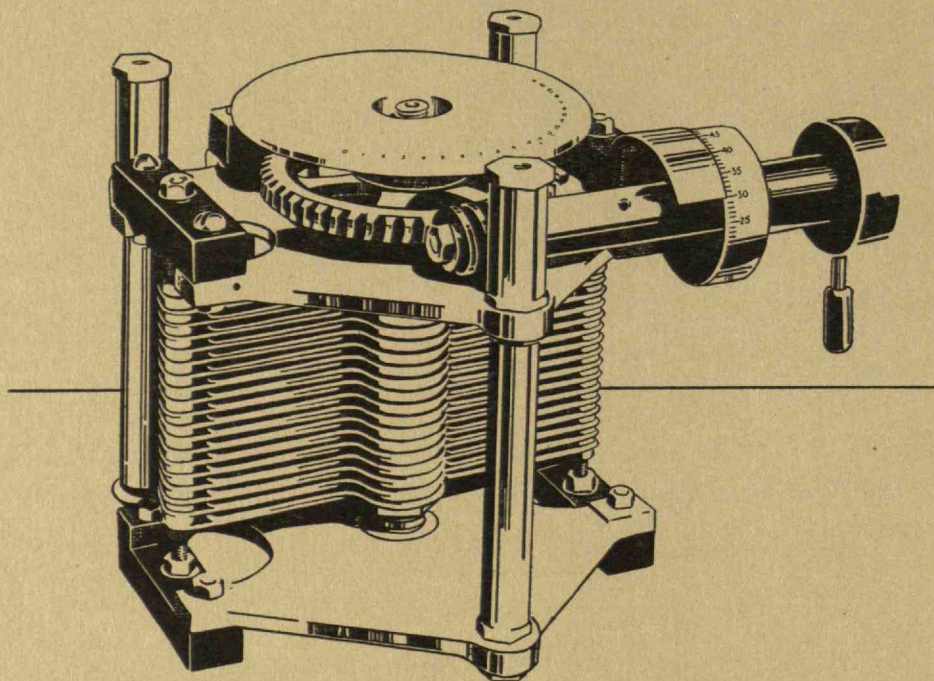
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